

UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

SATELLITE AND WIDEBAND
COMMUNICATIONS EQUIPMENT

AFSC 2E1X1

AFPT 90-2E1-086

DTIC QUALITY INSPECTED 4

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OCCUPATIONAL MEASUREMENT SQUADRON
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
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PREFACE

This report presents the results of an Air Force Occupational Survey of the Satellite and Wideband Communications Equipment (AFSC 2E1X1) career ladder. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by Chief Master Sergeant David G. McDaniel, Inventory Development Specialist, with computer programming support furnished by Ms. Jeanie C. Guesman. Mr. Richard G. Ramos provided administrative support. Second Lieutenant Thomas E. Murphy II, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other training and management personnel. Additional copies are available upon request to the AFOMS, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph AFB Texas 78150-4449 (DSN 487-6623).

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SUMMARY OF RESULTS

1. **Survey Coverage:** The Satellite and Wideband Communications Equipment (AFSC 2E1X1) career ladder incumbents were surveyed to obtain current task and equipment data for use in examining training programs. Survey results are based on responses from 1,846 members worldwide.
2. **Career Ladder Structure:** Structure analysis identified four job clusters and six independent jobs: Mobility Operations Support Job, Mobile Wideband Cluster, Defense Satellite Communications Systems Job, Fixed Wideband Cluster, Job Controller, Supervisory and Management Cluster, Quality Assurance Job, AFSATCOM Cluster, Engineering and Installation Job, and Instructor Job.
3. **Career Ladder Progression:** This career ladder is typical in that 3- and 5-skill level members spend most of their time performing technical tasks, while 7-skill level members are typically first-line supervisors performing a mixture of technical and supervisory tasks. There were no 9-skill level or CEM personnel in the survey sample.
4. **Training Analysis:** Analysis of career ladder documents indicates a fair level of support for the current Course Training Standard (CTS). All of the unsupported CTS elements should be reviewed as to their possible deletion from the CTS. These items received little to no support from either percent members performing data or training emphasis (TE) ratings. Also, there were many technical tasks performed by a high percentage of members, possessing a very high TE rating which could not be matched to the CTS. These tasks should be reviewed by career field functional managers and technical training subject-matter experts as to the possible need for their inclusion in the CTS.
5. **Job Satisfaction Analysis:** AFSC 2E1X1 members are less satisfied with their jobs in all areas than are members of a comparative sample of mission equipment management personnel. Members of the current sample are relatively equal in their indicated satisfaction with their jobs as previous AFSC 2E1X1 (formerly 304X0, 304X6) personnel surveyed in 1988 and 1987, respectively. Job satisfaction data of specific career ladder jobs show most job members are satisfied with their jobs. Only the Mobility Operations Support Job and AFSATCOM Cluster personnel appear genuinely dissatisfied with their work.
6. **Implications:** The current AFSC 2E1X1 career ladder job structure has changed somewhat since the merger of AFSCs 304X0 and 304X6, with jobs getting broader and encompassing more duties and tasks since the previous job structure identified in the previous Occupational Survey Reports. The AFMAN 36-2108 *Specialty Descriptions* accurately describe the jobs and tasks personnel at all skill levels perform. Job satisfaction is satisfactory for identified jobs, although satisfaction ratings of AFSC 2E1X1 personnel were consistently lower than those of a comparative sample. The training document analysis revealed some unsupported areas of the CTS which should be considered for deletion from the CTS. There are some technical tasks with high percent members performing not referenced to the CTS which should be considered for

inclusion in the CTS. Training personnel and career ladder functional managers should review this document to ensure it is complete and appropriate.

**OCCUPATIONAL SURVEY REPORT (OSR)
SATELLITE AND WIDEBAND COMMUNICATIONS EQUIPMENT
CAREER LADDER
(AFSC 2E1X1)**

INTRODUCTION

This is an OSR of the Satellite and Wideband Communications Equipment (AFSC 2E1X1) career ladder. This survey, completed in 1997, is the first since the October 1993 merger of Wideband Communications Equipment (AFSC 304X0) and Satellite Communications Equipment (AFSC 304X6) comprised the newly named AFSC 2E1X1. This survey, containing both active duty (AD) and Air National Guard (ANG) personnel, is intended to update the current data base and to identify any changes that may have taken place since the last surveys in 1987 (AFSC 304X6) and 1988 (AFSC 304X0).

Background

As described in the AFMAN 36-2108 *Specialty Description*, dated 31 October 1994, Satellite and Wideband Communications Equipment members install and check operation of wideband and earth terminal communications systems; assemble, program, adjust, and secure system components; review technical instructions, plans, and installation drawings to install wideband and earth terminal equipment and systems; ensure conformance to standard installation practices; measure, adjust, and operationally test equipment and systems; establish, manage configuration, and maintain communications links via satellite transponders; ensure high quality circuits for long distance information relay; employ orbiting communication satellite, line of sight, and tropospheric scatter techniques; and conduct tests to restore and maintain systems.

As members gain experience in the career ladder, the scope of tasks they perform begins to broaden and become more advanced. This is typical of the 5-skill level personnel, where members assess systems and align and adjust equipment for optimum system performance; test wire communications equipment such as teletypewriters and telephone carrier and repeater equipment; use antijam equipment and techniques to neutralize effects of communication jamming; perform and manage equipment alignment and calibration to satisfy system operational requirements; deploy and activate transportable wideband and earth terminal systems; interpret deployment orders; participate in site survey to ensure equipment location meets operational requirements and establishes communication links and interconnects communication facilities.

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Finally, the most senior personnel display a much larger emphasis on supervisory and managerial type activities, while their performance of technical tasks decreases significantly. This is typical of the 7-skill level, where members manage preventive maintenance; refer to circuit and cable diagrams to trace circuits; evaluate equipment performance using test equipment; perform preventive maintenance, self-verification, and loop tests of ground station and technical control equipment; operate, inspect, troubleshoot, adjust, align, and clean equipment and systems; evaluate recommended improvements to equipment performance and maintenance procedures; and develop and enforce safety standards for satellite and wideband communications maintenance activities.

Entry into the career ladder is from a 142-day training course conducted at Keesler AFB MS. This course provides a working knowledge of electronics fundamentals, test equipment operation, and maintenance of satellite and wideband equipment. Students attend a 58-day electronics principles (EP) course prior to entering into the equipment phase of training. Currently, this EP training is provided at Keesler AFB MS. When the training school reopens at Fort Gordon in October 1997, EP training will be conducted at Lackland AFB TX. During the equipment phase, students receive training on principles of fixed and transportable wideband and earth terminal communications systems and their operational procedures. Entry into the career ladder currently requires an Armed Services Vocational Aptitude Battery Electronic score of 67.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) AFPT 90-2E1-086, dated February 1996. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, and tasks from previous applicable OSRs. The preliminary task list was refined and validated through personal interviews with 55 subject-matter experts (SME) selected to cover a variety of major commands (MAJCOM) at the following locations:

BASE

Keesler AFB MS

Langley AFB VA

REASON FOR VISIT

338th Training Squadron

81st Maintenance Squadron

738th Engineering Installation Squadron

74th Air Control Squadron

1st Communications Squadron

Robins AFB GA	5th Combat Communications Support Squadron 51st Combat Communications Squadron 52nd Combat Communications Squadron 53rd Combat Communications Squadron 54th Combat Communications Squadron
Patrick AFB FL	45th Communications Squadron
Kelly AFB TX	838th Engineering Installation Squadron 76th Communications Squadron
Lackland AFB TX	37th Communications Squadron
Peterson AFB CO	21st Communications Squadron
Falcon AFB CO	721st Mobile Command and Control Squadron
Offutt AFB NE	50th Maintenance Squadron 755th Communications Squadron
Holloman AFB NM	55th Operations Squadron 4th Space Warning Squadron

Others contacted include Air Force Personnel Center (AFPC) classification personnel, training and resource managers, and the Air Force functional manager.

The resulting JI contains a comprehensive listing of 701 tasks grouped under 16 duty titles, with a background section requesting incumbents to answer questions such as their grade, job title, component status, ANG Status, shift schedule worked, AFSC before 31 October 1993, time in present job, time in service, and job satisfaction.

Survey Administration

From February 1996 to August 1996, base training offices at operational bases worldwide administered the inventory to all eligible AFSC 2E1X1 personnel. Members eligible for the survey consisted of the total assigned 3-, 5-, and 7-skill level populations, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring within the time the inventories were administered to the field; and (4) personnel in their jobs less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by AFPC, Randolph AFB TX.

Each individual completing the inventory first filled in an identification and biographical information section and then checked each task he or she currently performed on the job. After checking tasks performed, each individual rated tasks checked on a 9-point scale showing relative time spent on that task, compared to other tasks performed. The ratings range from 1 (very small amount time spent) to 9 (very large amount time spent).

To determine relative time spent for each task, all incumbent's ratings are assumed to account for 100 percent of job time. The ratings are, therefore, summed and each individual task rating is divided by the total of all task ratings and subsequently multiplied by 100 to provide a relative percentage of time spent on each task.

Survey Sample

Personnel were selected to participate in this study to ensure an accurate representation across MAJCOMs and paygrades. Table 1 reflects the percentage, by MAJCOM, of assigned and sampled AFSC 2E1X1 AD individuals. As of October 1996, the 1,392 AD respondents in the final sample represent 56 percent of all assigned AD AFSC 2E1X1 personnel. Also included within the sample were 454 ANG 2E1X1 personnel. Table 2 reflects the percentage distribution by paygrade groups.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 2E1X1 personnel (generally E-6 or E-7 craftsmen) also completed a second booklet for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the JIs. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Training Emphasis (TE). TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 53 senior AFSC noncommissioned officers (NCO) who completed a TE booklet were asked to select tasks they felt required some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method. There was acceptable agreement among these 53 raters. The average TE rating was 2.07, with a standard deviation of 1.14. Any task with a TE rating of 3.21 or above is considered to have high TE.

Task Difficulty (TD). TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 59 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was high. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

TABLE 1
MAJCOM DISTRIBUTION OF ACTIVE DUTY 2E1X1 PERSONNEL

COMMAND	PERCENT OF ACTIVE DUTY ASSIGNED	PERCENT OF ACTIVE DUTY SAMPLE
ACC	36	37
USAFE	14	14
PACAF	13	17
AFSPC	12	9
AFMC	7	8
AMC	6	5
AETC	4	4
OTHER	8	6
TOTAL	100	100

	<u>ACTIVE DUTY</u>	<u>AIR NATIONAL GUARD</u>	<u>TOTAL</u>
Total Assigned:	2,494	1,497	3,991
Total Eligible/Surveyed:	2,094	1,430	3,524
Total in Survey Sample:	1,392	454	1,846
Percent of Assigned in Sample:	56%	30%	46%
Percent of Surveyed in Sample:	66%	32%	52%

*All data is as of October 1996

TABLE 2
PAYGRADE DISTRIBUTION OF SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-1 to E-3	16	16
E-4	32	33
E-5	25	25
E-6	15	15
E-7	11	11
E-8	1	0
E-9	0	0

SPECIALTY JOBS (Career Ladder Structure)

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs the respondents perform. The Comprehensive Occupational Data Analysis Programs (CODAP) assist by creating an individual job description for each respondent based on tasks performed and relative amount of time spent on tasks. The CODAP automated job clustering program then compares all individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group, or forms new groups based on similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the *Job*. When two or more jobs have a substantial degree of similarity in tasks performed and time spent performing tasks, they are grouped together and identified as a *Cluster*. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

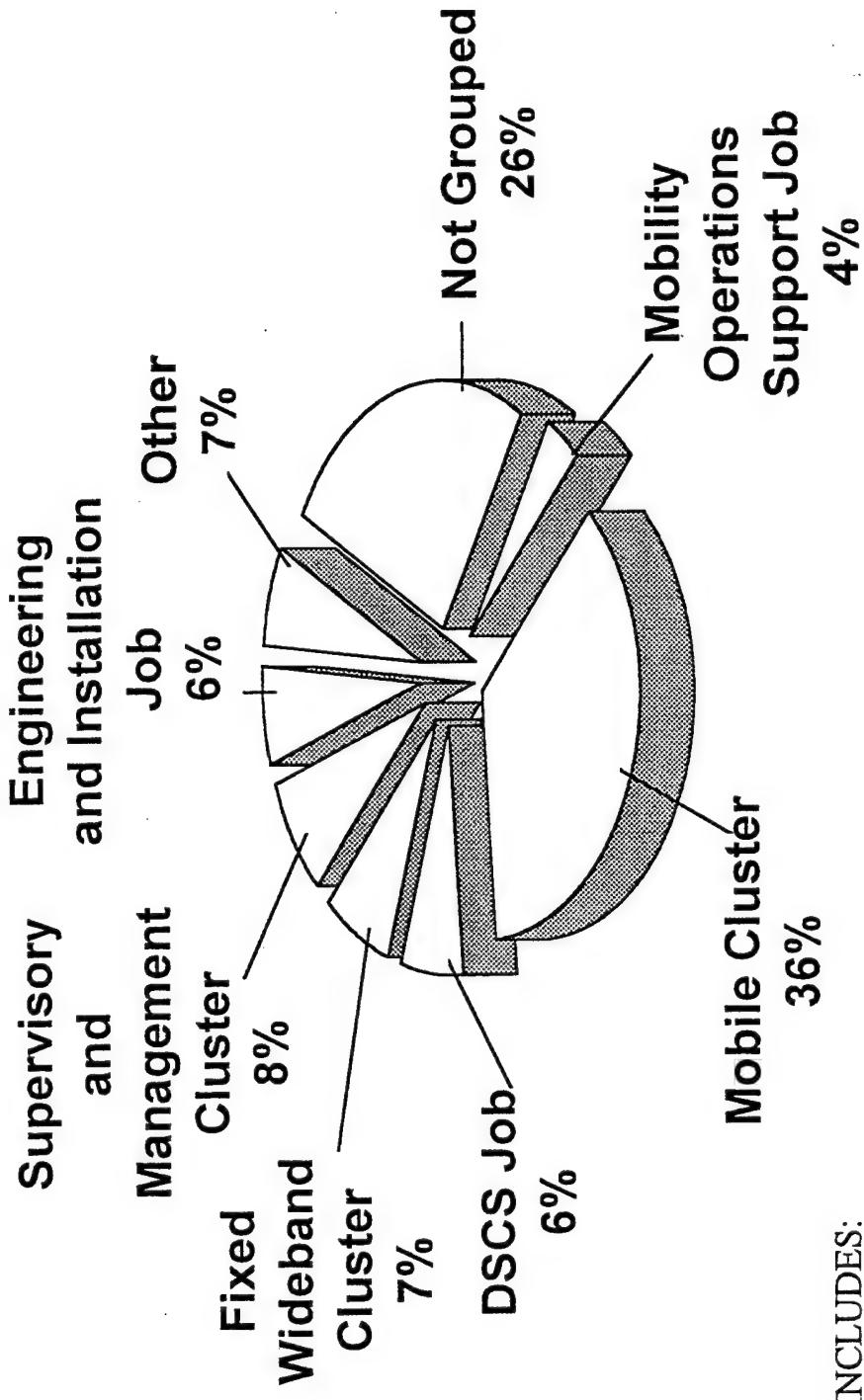
Overview of Specialty Jobs

Based on analysis of tasks performed and amount of time spent performing each task, six independent jobs (IJ) and four job clusters were identified. Figure 1 illustrates the jobs performed by AFSC 2E1X1 personnel.

A listing of these clusters and IJs is provided below. The stage (STG) number shown beside each title references computer-printed information, while the letter "N" represents the number of personnel in each group.

- I. MOBILITY OPERATIONS SUPPORT JOB (STG309, N=65)
- II. MOBILE CLUSTER (STG273, N=681)
- III. DEFENSE SATELLITE COMMUNICATIONS SYSTEMS JOB (STG220, N=117)
- IV. FIXED WIDEBAND CLUSTER (STG085, N=128)
- V. JOB CONTROLLER JOB (STG329, N=20)
- VI. SUPERVISORY AND MANAGEMENT CLUSTER (STG259, N=143)
- VII. QUALITY ASSURANCE JOB (STG279, N=45)

AFSC 2E1X1 CAREER LADDER JOBS



OTHER INCLUDES:

Quality Assurance IJ-2%

AFSATCOM Cluster-2%

Job Controller-1%

Instructor Job-1%

FIGURE 1

VIII. AFSATCOM CLUSTER (STG100, N=38)

IX. ENGINEERING AND INSTALLATION JOB (STG131, N=118)

X. INSTRUCTOR JOB (STG276, N=19)

The respondents forming these groups account for 74 percent of the survey sample. The remaining 26 percent were performing tasks which did not group with any defined jobs. Job titles given by respondents which were representative of these personnel include, Technical Support Team Member, Dorm Manager, Antenna Maintenance, and Tactical Command Technician.

Group Descriptions

The following paragraphs contain brief descriptions of the four clusters and six IJs identified in the career ladder structure analysis. Appendix A lists representative tasks performed by the identified job cluster and IJs. Table 3 displays time spent on duties, while Table 4 provides demographic information for each job discussed in this report.

I. MOBILITY OPERATIONS SUPPORT JOB (STG309). The 65 members of this job account for 4 percent of the survey sample. Approximately 30 percent of the members of this job are ANG personnel (see Table 4). The members of this job are concerned mainly with the transportation, set-up, and take-down of mobility and contingency equipment. Expectedly, members spend 55 percent of their time performing mobility and contingency activities (see Table 3). These members travel on-site to deployed locations, utilize M-series vehicles, and perform camouflage procedures on the equipment. Members also perform palletizing procedures, and inspect these pallets to maintain equipment effectiveness. Representative tasks of this job include:

- pack mobility or contingency equipment for shipment or movement
- perform camouflage procedures
- erect tents
- operate specialized mobility vehicles, such as M-series vehicles
- palletize mobility or contingency equipment for shipment or movement
- perform pre- or post-deployment inspections

TABLE 3

AVERAGE TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	MOBILITY OPERATIONS SUPPORT JOB (STG309)	MOBILE CLUSTER (STG273)	DSCS JOB (STG220)	FIXED WIDEBAND CLUSTER (STG085)	JOB CONTROLLER (STG329)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3	8	9	9	22
B PERFORMING TRAINING ACTIVITIES	2	4	3	4	5
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	3	4	6	4	13
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	5	5	5	8	14
E PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	4	4	5	7	23
F PERFORMING GENERAL REPAIR ACTIVITIES	5	6	9	11	1
G MAINTAINING FIXED AND MOBILE ANTENNA SYSTEMS	6	10	6	3	*
H MAINTAINING FIXED AND MOBILE TRACKING SYSTEMS	*	2	3	1	0
I MAINTAINING RECEIVERS AND DOWNLINK SYSTEMS	2	6	8	5	0
J MAINTAINING TRANSMITTERS AND UPLINK SYSTEMS	2	7	13	6	0
K MAINTAINING AIR FORCE SATELLITE COMMUNICATIONS (AFSATCOM) SYSTEMS	1	1	1	3	0
L MAINTAINING MULTIPLEXERS, MODEMS, AND ASSOCIATED INTERFACE EQUIPMENT	1	3	7	10	0
M MAINTAINING COMMON OR MISCELLANEOUS SUBASSEMBLIES	1	4	8	18	0
N PERFORMING EQUIPMENT OR SATELLITE OPERATIONS ACTIVITIES	5	11	16	6	*
O PERFORMING COMMUNICATIONS EQUIPMENT INSTALLATION ACTIVITIES	4	4	*	4	0
P PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	55	20	*	1	21

* Denotes less than 1 percent members performing

NOTE: Columns may not add up to 100 percent due to rounding

TABLE 3 (CONTINUED)

AVERAGE TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	SUPERVISORY MANAGEMENT CLUSTER (STG259)	QUALITY ASSURANCE JOB (STG279)	AFSATCOM CLUSTER (STG100)	ENGINEERING AND INSTALLATION (STG131)	INSTRUCTOR JOB (STG329)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	45	47	8	14	22
B PERFORMING TRAINING ACTIVITIES	11	10	3	6	47
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	8	13	7	1	6
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	8	6	9	7	8
E PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	8	16	9	1	3
F PERFORMING GENERAL REPAIR ACTIVITIES	2	*	9	24	1
G MAINTAINING FIXED AND MOBILE ANTENNA SYSTEMS	2	2	6	1	1
H MAINTAINING FIXED AND MOBILE TRACKING SYSTEMS	*	*	1	*	0
I MAINTAINING RECEIVERS AND DOWNLINK SYSTEMS	1	*	2	1	*
J MAINTAINING TRANSMITTERS AND UPLINK SYSTEMS	1	*	2	*	*
K MAINTAINING AIR FORCE SATELLITE COMMUNICATIONS (AFSATCOM) SYSTEMS	1	0	32	*	*
L MAINTAINING MULTIPLEXERS, MODEMS, AND ASSOCIATED INTERFACE EQUIPMENT	1	*	2	1	*
M MAINTAINING COMMON OR MISCELLANEOUS SUBASSEMBLIES	1	*	7	2	*
N PERFORMING EQUIPMENT OR SATELLITE OPERATIONS ACTIVITIES	2	*	2	*	11
O PERFORMING COMMUNICATIONS EQUIPMENT INSTALLATION ACTIVITIES	1	*	1	35	*
P PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	8	5	1	8	*

* Denotes less than one percent members performing

NOTE: Columns may not add up to 100 percent due to rounding

TABLE 4

SELECTED BACKGROUND DATA FOR AFSC 2E1X1 CAREER LADDER JOBS

NUMBER IN GROUP	MOBILITY OPERATIONS SUPPORT JOB	MOBILE CLUSTER	DSCS JOB	FIXED WIDEBAND CLUSTER		JOB CONTROLLER
				117	128	
PERCENT OF SAMPLE	4%	37%	6%	7%	7%	1%
PERCENT IN CONUS	82%	80%	35%	32%	32%	80%
DAFSC DISTRIBUTION:						
2E131	26%	18%	23%	27%	0%	
2E151	65%	60%	71%	59%	55%	
2E171	9%	22%	6%	14%	45%	
COMPONENT STATUS						
ACTIVE DUTY	71%	65%	100%	95%	70%	
GUARD	29%	35%	0%	5%	30%	
PREDOMINANT PAYGRADE(S)						
AVERAGE MONTHS TAFMS ACTIVE	E-4 69	E-4/E-5 97	E-4 88	E-4/E-5 92	E-4 121	
DUTY ONLY						
PERCENT IN FIRST ENLISTMENT ACTIVE	49%	32%	35%	38%	5%	
DUTY ONLY						
Avg Number of Tasks Performed	44	137	120	167	52	
Percent Supervising	18%	41%	42%	39%	20%	

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR AFSC 2E1X1 CAREER LADDER JOBS

	SUPERVISORY/ MANAGEMENT CLUSTER	QUALITY ASSURANCE JOB	AFSATCOM CLUSTER	ENGINEERING/ INSTALLATION JOB	INSTRUCTOR JOB
NUMBER IN GROUP	143	45	38	118	19
PERCENT OF SAMPLE	8%	2%	2%	6%	1%
PERCENT IN CONUS	60%	64%	82%	99%	89%
DAFSC DISTRIBUTION:					
2E131	1%	0%	29%	6%	0%
2E151	24%	40%	65%	66%	58%
2E171	75%	60%	5%	28%	42%
COMPONENT STATUS:					
ACTIVE DUTY	91%	91%	100%	49%	100%
GUARD	9%	9%	0%	51%	0%
PREDOMINANT PAYGRADE(S)	E-6/E-7	E-5/E-6/E-7	E-4	E-4/E-5	E-5
AVERAGE MONTHS TAFMS ACTIVE	182	172	61	115	144
DUTY ONLY					
PERCENT IN FIRST ENLISTMENT ACTIVE	2%	2%	39%	22%	0%
DUTY ONLY					
AVG NUMBER OF TASKS PERFORMED	116	62	71	46	39
PERCENT SUPERVISING	87%	47%	11%	34%	21%

- transport mobility or contingency equipment to or from deployed locations
- install or remove mobile communications equipment
- don or doff chemical warfare personal protective clothing

The members of this job perform a relatively low number of tasks, with 44 the average performed by all members. A 5-skill level is held by 65 percent of job members, with E-4 being the predominant paygrade present in the job (see Table 4). Members average just under 6 years TAFMS, with nearly 50 percent in their first enlistment. Supervisory positions are fairly few in number, with just 18 percent of all job members indicating they supervise other personnel.

II. MOBILE CLUSTER (STG273). The 681 members of this cluster represent 37 percent of the survey sample, and the largest group in the career ladder. Thirty-five percent of the members in this cluster are ANG personnel. Members in this cluster spend their time fairly evenly across all listed duties, with the only noticeable duty emphasis, 20 percent of time spent, on the performance of mobility and contingency activities (see Table 4). Members of this cluster do many of the tasks listed in the Mobility Operations Support Job, as far as setting up and taking down of communications-type equipment at deployment locations. The difference between the two comes in the performance of satellite operations activities by members of the Mobile Cluster. Members of this cluster include both Mobile Wideband and Mobile SATCOM personnel. Configuring multiplexers and modems, as well as up-converters and down-converters are examples of some of the satellite operations activities present in the Mobile Cluster. Representative tasks for this cluster include:

- configure patch panels
- establish communications links
- annotate master station logs
- configure multiplexers
- configure modems
- establish orderwire contacts
- configure down-converters or up-converters
- pack mobility or contingency equipment for shipment or movement
- operate specialized mobility vehicles, such as M-series vehicles
- install or remove mobile communications equipment

As mentioned above, the members of this cluster are made up of both Mobile Wideband and Mobile SATCOM personnel. The difference between these two jobs is mainly the mode of communication used by the respective personnel. The mobile activities performed among the two groups is identical. After analysis of the two groups, the main emphasis seemed to be on the

mobile aspect of the jobs rather than the communication equipment used. Given the large similarity between the two groups aside from their respective communication equipment used, the decision was made to cluster the two jobs into one Mobile Cluster. The members of this cluster perform an average of 137 tasks, more than all but one of the job groups identified. Members have an average of 8 years TAFMS, with one-third of its members in their first enlistment (see Table 4). Over 40 percent of the members perform supervisory functions, 60 percent hold a 5-skill level, with E-4 and E-5 the predominant paygrades (see Table 4).

III. DEFENSE SATELLITE COMMUNICATIONS SYSTEMS JOB (STG220). The 117 members of this job represent 6 percent of the survey sample, and are all active duty personnel (see Table 4). Members of this job spent most of their time performing equipment or satellite operations activities, and maintaining transmitters and uplink systems (see Table 3). Representative tasks for this job include:

- compose and transmit messages using teletype equipment
- initiate satellite equipment reports (SERs)
- perform PMIs on antenna systems
- access core automated maintenance system (CAMS) menus and data screens
- perform PMIs on down-converters
- perform carrier noise density checks (C/KTs)
- perform bit error rate tests
- configure modems
- configure down-converters or up-converters

Over 70 percent of members hold a 5-skill level, and average just over 7 years TAFMS (see Table 4). The predominant paygrade for job members is E-4, 35 percent are in their first enlistment and perform an average of 120 tasks. Supervisory positions are fairly numerous, with 41 percent of job members indicating they supervise personnel.

IV. FIXED WIDEBAND CLUSTER (STG085). The 128 members of this cluster represent 7 percent of the survey sample. This cluster is primarily comprised of AD personnel, with only 5 percent of the sample being ANG personnel. Members spent 30 percent of their time performing general repair activities and maintaining subassemblies. Members are in a permanent location, in contrast to their Mobile Wideband counterparts, and usually have a station that is more expansive and involved than do mobile personnel. Representative tasks of this cluster include:

- access core automated maintenance system (CAMS) menus and data screens
- fabricate or repair equipment cables
- troubleshoot cable assemblies
- install cross-connections
- operationally check test equipment
- perform PMIs on multiplexers and associated interface equipment
- store equipment, tools, parts, or supplies
- update maintenance data collection (MDC) data using CAMS

The most apparent difference among the two groups found within the Fixed Wideband Cluster is their respective duty location. Nearly 50 percent of Fixed Wideband Cluster personnel are assigned overseas, while the other half is assigned in CONUS. Of the personnel overseas, the predominant MAJCOMs are USAFE and PACAF, while personnel in CONUS are almost solely located in ACC. With an average of 167 tasks performed, Fixed Wideband personnel perform the most tasks of any group identified. Members maintain about 8 years TAFMS, with 38 percent of personnel in their first enlistment. E-4 and E-5 are the predominant paygrades, and nearly 60 percent of members carry a 5-skill level. Supervisory positions are fairly numerous, with 39 percent of Fixed Wideband members indicating they supervise other personnel (see Table 4).

V. JOB CONTROLLER JOB (STG329). The 20 members of this job represent just 1 percent of the survey sample. Thirty percent of its members are ANG personnel. Job members spend nearly 70 percent of their time dealing with management and supervisory activities, maintenance management, and performing mobility and contingency activities. Through frequent use of CAMS, members are concerned with reporting equipment status, and maintenance data collection. Representative tasks for this job include:

- access core automated maintenance system (CAMS) menus and data screens
- retrieve CAMS listings or reports
- analyze CAMS data
- review preventive maintenance schedules
- update maintenance data collection (MDC) data using CAMS
- review equipment maintenance records
- identify and report equipment or supply problems
- coordinate maintenance of equipment with appropriate agencies
- maintain or update status indicators, such as boards, graphs, or charts
- verify accuracy of CAMS daily inputs

Job Controllers are split between 5- and 7-skill levels, and have a predominant paygrade of E-4 (see Table 4). Members average just over 10 years TAFMS, with only 5 percent of members currently in their first enlistment. Job Controllers perform an average of 52 tasks, with 20 percent of job members indicating they supervise other personnel (see Table 4).

VI. SUPERVISORY AND MANAGEMENT CLUSTER (STG259). The 143 members of this cluster represent 8 percent of the survey sample. Cluster members are predominantly AD personnel, with just 9 percent of members being ANG personnel. This cluster is typical of any supervisor/management job identified. There are both first-line supervisors and higher-level managers present in the Supervisory and Management Cluster. Necessarily, nearly half of members' time is spent dealing with supervisory and managerial type activities (see Table 3). Although cluster members do perform some technical tasks, their main emphasis comes in the supervision of other personnel. Representative tasks of this job include:

- supervise military personnel
- determine or establish work assignments or priorities
- write performance reports or supervisory appraisals
- counsel subordinates concerning personal matters
- evaluate personnel for compliance with performance standards
- conduct supervisory performance feedback sessions
- interpret policies, directives, or procedures for subordinates

As mentioned before, both first-line supervisors and higher-level managers are present. First-line supervisors, mainly NCOICs, perform tasks like writing Enlisted Performance Reports (EPRs), conducting OJT, recommending personnel for awards/decorations, etc. The managers present in this cluster mainly call themselves superintendents and concentrate mainly on determining budget requirements, equipment requirements, long range planning, and curricula development. Seventy-five percent of members hold a 7-skill level, with E-6 and E-7 the predominant paygrades (see Table 4). With an average of over 15 years TAFMS, members of the Supervisory and Management Cluster have the highest experience of any group identified. Only 2 percent of members are in their first enlistment. Cluster members perform an average of 116 tasks, with nearly 90 percent indicating they supervise other personnel (see Table 4).

VII. QUALITY ASSURANCE JOB (STG279). The 45 members of this job represent 2 percent of the survey sample. Quality Assurance personnel are predominantly AD, with only 9 percent of the members being ANG personnel (see Table 4). Members spend nearly half of their time performing supervisory and managerial activities which are typical of any quality assurance personnel. Frequent inspections of personnel, facilities, and equipment for adherence to safety, standards, etc., are a few examples of these. Representative tasks for this job include:

- evaluate inspection report findings or inspection procedures
- evaluate personnel for compliance with performance standards
- write inspection reports
- conduct staff assistance visits, inspections, or audits
- compile data for records, reports, logs, or trend analyses
- evaluate safety or security programs
- evaluate serviceability of equipment, tools, parts, or supplies
- conduct safety inspections of equipment or facilities
- evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) Program
- review equipment maintenance records

Members of this job hold either a 5- or 7-skill level, and have predominant paygrades of E-5, E-6, and E-7 (see Table 4). Quality Assurance personnel have an average of over 14 years TAFMS, second only to the members of the Supervisory and Management Cluster. Members perform an average of 62 tasks. In addition, only 2 percent of Quality Assurance members are in their first enlistment, while nearly 50 percent indicate they supervise other personnel. This percent supervising, incidentally, is once again second only to the Supervisory and Management Cluster.

VIII. AFSATCOM CLUSTER (STG100). The 38 members of this cluster are all on active duty and represent 2 percent of the survey sample. Members in this cluster spend most of their time maintaining Air Force Satellite Communications (AFSATCOM) systems, and operationally checking the operation of such equipment as status display units, receiver-transmitter (RT) controls, fault indicator panels (FIPs). Representative tasks for this cluster include:

- troubleshoot AFSATCOM systems to identify faulty units
- access core automated maintenance system (CAMS) menus and data screens
- operationally check receiver-transmitter (RT) controls
- operationally check AFSATCOM modems
- operationally check fault indicator panels (FIPs)
- operationally check emergency action message (EAM) equipment
- perform PMIs on antenna systems
- store equipment, tools, parts, or supplies
- configure Air Force Satellite Communications (AFSATCOM) terminal equipment
- operationally check test equipment

There were two areas of concentration within the AFSATCOM Cluster, maintenance and communications. The maintenance personnel troubleshoot and repair AFSATCOM equipment, while communications personnel operate the satellite communications equipment. Over 65 percent of AFSATCOM personnel hold a 5-skill level, with a predominant paygrade of E-4. Members are fairly experienced, with an average TAFMS of just over 5 years (see Table 4). Nearly 40 percent of AFSATCOM personnel are in their first enlistment, and members perform an average of 71 tasks. Eleven percent of members indicate they supervise other personnel (see Table 4).

IX. ENGINEERING AND INSTALLATION JOB (STG131). The 118 members of this job represent 6 percent of the survey sample. Just over 50 percent of job members are ANG personnel, the highest representation of ANG personnel out of all groups identified (see Table 4). Members spend nearly 60 percent of their time performing general repair activities and installing communications equipment. These personnel are typically the first on the scene of deployment, involved in the initial set up of communication facilities and operations. This involves installing basic wiring, power and equipment to the site, and everything else involved with the setting up of a mobile communications environment.

- form and fan equipment cables
- install cable assemblies or internal wiring
- install fixed communications equipment
- install equipment grounds
- install or remove electrical conduits
- install or remove cable ladders
- assemble and install cable troughs
- fabricate or repair equipment cables
- assemble and install interconnects
- install cross connections
- install or remove distribution frames and associated wiring

Over 60 percent of members carry a 5-skill level, and have predominant paygrades of E-4 and E-5 (see Table 4). Members average just under 10 years TAFMS, with 22 percent in their first enlistment, and 34 percent indicating they supervise other personnel. Additionally, Engineering and Installation personnel perform an average of 46 tasks.

X. INSTRUCTOR JOB (STG276). The 19 members of this job are all on active duty, and represent 1 percent of the survey sample. Members are typical of any instructors, focusing the majority of the time on the teaching and training of new AFSC 2E1X1 personnel (see Table 3). Representative tasks for this job include:

- conduct formal course classroom training
- evaluate progress of trainees
- counsel trainees on training progress
- personalize lesson plans
- develop formal course curricula, plans of instructions (POIs), or specialty training standards (STSs)
- develop training materials or aids
- complete student entry or withdrawal forms
- administer or score tests
- develop training programs, plans, or procedures

Instructor personnel are exclusively 5- and 7-skill levels, average 12 years TAFMS, contain no members in their first enlistment, and have a predominant paygrade of E-5 (see Table 4). Finally, job members perform an average of 39 tasks, with 21 percent supervising other personnel (see Table 4).

Comparison to Previous Study

A list of jobs identified in the current survey as compared to those identified in the two previous surveys is provided in Table 5. Since the merger, all jobs currently identified can be traced to one of the two previous AFSCs (304X0, 304X6) surveyed in 1988 and 1987, respectively. Basically, the merger represents a true combination of both Satellite and Wideband personnel. Four jobs were previously identified in the two original AFSCs which did not show up in the current survey. These are: Crew Director (AFSC 304X6), Base Intrusion Security System (BISS) Personnel Cluster (AFSC 304X0), Closed-Circuit Television (CCTV) Technicians (AFSC 304X0), and Teletype Multiplexer System Technicians (AFSC 304X0).

TABLE 5

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND PREVIOUS SURVEYS

CURRENT 2E1X1 OSR	1988 304X0 OSR	1987 304X6 OSR
Mobility Operations Support Job	Mobility Personnel	GMF Personnel GMF Support Personnel
Mobile Cluster	Mobile Wideband Communications Equipment Personnel Cluster <i>Not Identified</i>	GMF Personnel GMF Support Personnel CONUS DSCS Personnel First-Term DSCS Personnel Fixed DSCS Personnel First-Term Overseas DSCS Personnel <i>Not Identified</i>
Defense Satellite Communications Systems Job		
Fixed Wideband Cluster	Fixed Wideband Communications Equipment Personnel Cluster	Job Control Personnel Supervisors/Managers <i>Not Identified</i>
Job Controller	Job Control Supervisors	AFSATCOM Personnel <i>Not Identified</i>
Supervisory and Management Cluster	Supervisory/Management Personnel Cluster	Instructors Crew Director <i>Not Identified</i>
Quality Assurance Job	Quality Control Managers <i>Not Identified</i>	
AFSATCOM Cluster	Electronic and Installation Personnel	
Engineering and Installation Job	Technical Training Instructors <i>Not Identified</i>	
Instructor Job	Base Intrusion Security System (BISS) Personnel Cluster <i>Not Identified</i>	
<i>Not Identified</i>	Closed-Circuit Television (CCTV) Technicians Teletype Multiplexer System Technicians	<i>Not Identified</i>
<i>Not Identified</i>		<i>Not Identified</i>

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with analysis of the career ladder structure, is an important part of each occupational survey. DAFSC analysis examines differences in tasks performed between skill-level members. This information may then be used to evaluate how well career ladder documents, such as AFMAN 36-2108 *Specialty Descriptions*, reflect what career ladder personnel are doing in the field.

The distribution of AFSC 2E1X1 skill-level groups across career ladder jobs is displayed in Table 6. More than 40 percent of AD 3-skill level personnel and nearly half of ANG 5-skill level personnel are located in the Mobile Cluster. In addition, 61 percent of ANG 7-skill level personnel are located in this Mobile Cluster as well. Basically, the personnel in the Mobile Cluster easily represent the core job of AFSC 2E1X1. The other identified jobs receive a fairly equal distribution of both ANG and AD personnel (see Table 6). The only other item of note is AD 7-skill levels have the highest representation in the Supervisory and Management Cluster, with nearly 30 percent, out of all other skill levels, AD or ANG.

AD Skill-Level Descriptions

DAFSC 2E131. The 291 3-skill level personnel, representing 16 percent of the survey sample, perform an average of 83 tasks. Over 50 percent of 3-skill level personnel perform one of two jobs. These jobs are the Mobile Cluster and the Fixed Wideband Cluster (see Table 6). Their time is dispersed fairly evenly across all identified duties present in the career ladder, with the highest emphasis placed on performing mobility and contingency activities and equipment or satellite operations activities (see Table 7). Table 8 lists representative tasks they perform, demonstrating the basic technical nature of their work.

DAFSC 2E151. The 739 5-skill level personnel, representing 40 percent of the survey sample, perform an average of 101 tasks. Thirty-six percent of 5-skill level personnel work in the Mobile Cluster, while another 20 percent are split between the Defense Satellite Communications Systems Job and the Fixed Wideband Cluster (see Table 6). Table 7 shows the fairly even distribution of time spent on duties by 5-skill level personnel, with their highest concentration dealing with supervisory and management activities. Table 9 shows that, like their junior counterparts, 5-skill level personnel perform primarily technical tasks. What distinguishes 5-skill level personnel from 3-skill level personnel is that a higher percentage of 5-skill level personnel perform some basic supervisory functions (see Table 10). Table 10 also shows 5-skill level personnel perform every task a 3-skill level member does in addition to the supervisory taskings shown. This further explains the high number of average tasks performed.

TABLE 6

DISTRIBUTION OF SKILL-LEVEL MEMBERS
ACROSS CAREER LADDER JOBS

SPECIALTY JOBS	ACTIVE DUTY			ANG	
	DAFSC 2E131 (N=291)	DAFSC 2E151 (N=739)	DAFSC 2E171 (N=363)	DAFSC 2E151 (N=291)	DAFSC 2E171 (N=162)
I. MOBILITY OPERATIONS SUPPORT JOB	6	4	1	6	2
II. MOBILE CLUSTER	41	36	15	49	61
III. DEFENSE SATELLITE COMMUNICATIONS SYSTEMS JOB	9	11	2	-	-
IV. FIXED WIDEBAND CLUSTER	12	10	4	2	1
V. JOB CONTROLLER	-	2	1	-	4
VI. SUPERVISORY AND MANAGEMENT CLUSTER	*	5	26	-	8
VII. QUALITY ASSURANCE JOB	-	2	6	-	3
VIII. AFSATCOM CLUSTER	4	3	1	-	-
IX. ENGINEERING AND INSTALLATION JOB	2	5	4	14	11
X. INSTRUCTOR JOB	-	2	2	-	-
OTHER (NOT GROUPED)	26	20	38	29	10

* Denotes less than 1 percent
- Denotes 0 percent

TABLE 7

TIME SPENT ON DUTIES BY MEMBERS OF SKILL-LEVEL GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	ACTIVE-DUTY			ANG		
	DAFSC 2E131 (N=291)	DAFSC 2E151 (N=739)	DAFSC 2E171 (N=363)	DAFSC 2E151 (N=291)	DAFSC 2E171 (N=162)	
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3	13	41	6	6	18
B PERFORMING TRAINING ACTIVITIES	1	6	10	2	2	9
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	4	6	10	2	2	4
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	7	8	7	5	5	6
E PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	7	7	6	1	1	4
F PERFORMING GENERAL REPAIR ACTIVITIES	10	8	3	11	11	6
G MAINTAINING FIXED AND MOBILE ANTENNA SYSTEMS	8	6	2	10	10	7
H MAINTAINING FIXED AND MOBILE TRACKING SYSTEMS	2	1	*	1	1	1
I MAINTAINING RECEIVERS AND DOWNLINK SYSTEMS	6	4	1	7	7	4
J MAINTAINING TRANSMITTERS AND UPLINK SYSTEMS	6	5	2	6	6	4
K MAINTAINING AIR FORCE SATELLITE COMMUNICATIONS (AFSATCOM) SYSTEMS	4	2	*	1	1	1
L MAINTAINING MULTIPLEXERS, MODEMS, AND ASSOCIATED INTERFACE EQUIPMENT	5	3	2	3	2	2
M MAINTAINING COMMON OR MISCELLANEOUS SUBASSEMBLIES	7	5	2	4	4	3
N PERFORMING EQUIPMENT OR SATELLITE OPERATIONS ACTIVITIES	12	8	3	10	10	7
O PERFORMING COMMUNICATIONS EQUIPMENT INSTALLATION ACTIVITIES	4	4	3	10	10	7
P PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	14	12	8	21	16	

* Denotes less than 1 percent

NOTE: Columns may not add up to 100 percent due to rounding

TABLE 8
REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 2E131 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=291)
E149 Access core automated maintenance system (CAMS) menus and data screens	68
N600 Annotate master station logs	65
N605 Configure patch panels	63
G197 Perform PMIs on antenna systems	62
N607 Establish communications links	60
F174 Install equipment grounds	60
N602 Configure down-converters or up-converters	59
F180 Remove or replace air filters	59
N603 Configure modems	59
F171 Fabricate or repair equipment cables	58
P680 Fire weapons for qualification	58
G233 Visually inspect waveguides	58
F183 Remove or replace minor plug-in or screw-in electronic components	57
N604 Configure multiplexers	56
D140 Inventory equipment, tools, parts, or supplies	56
I255 Perform PMIs on down-converters	56
F175 Operationally check test equipment	55
F188 Troubleshoot cable assemblies	55
I248 Align down-converters	53
P691 Pack mobility or contingency equipment for shipment or movement	50
J313 Perform PMIs on up-converters	50
D148 Store equipment, tools, parts, or supplies	49
P694 Perform camouflage procedures	48
N611 Perform acquisition or tracking procedures	48
N608 Establish orderwire contacts	48
P696 Perform pre- or post-deployment inspections	46
L439 Perform PMIs on multiplexers and associated interface equipment	45
F176 Perform preventive maintenance inspections (PMIs) on equipment safety devices, such as interlocks	45
C111 Destroy classified materials	45
F187 Solder or desolder connectors or hardwire circuits	44
P697 Perform site security	44
J307 Perform PMIs on high-power amplifiers (HPAs)	44
P679 Erect tents	44

TABLE 9
REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 2E151 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=739)
E149 Access core automated maintenance system (CAMS) menus and data screens	72
F171 Fabricate or repair equipment cables	64
D140 Inventory equipment, tools, parts, or supplies	63
F175 Operationally check test equipment	60
F180 Remove or replace air filters	59
G197 Perform PMIs on antenna systems	58
B84 Conduct OJT	57
P680 Fire weapons for qualification	55
N600 Annotate master station logs	55
D135 Evaluate serviceability of equipment, tools, parts, or supplies	54
N603 Configure modems	54
F174 Install equipment grounds	54
C111 Destroy classified materials	54
F183 Remove or replace minor plug-in or screw-in electronic components	53
N605 Configure patch panels	53
N607 Establish communications links	53
F188 Troubleshoot cable assemblies	52
E163 Review preventive maintenance schedules	51
N604 Configure multiplexers	50
B99 Maintain training records or files	50
C120 Inventory classified materials	50
D148 Store equipment, tools, parts, or supplies	49
N602 Configure down-converters or up-converters	49
E161 Retrieve CAMS listings or reports	49
P677 Don or doff chemical warfare personal protective clothing	48
P691 Pack mobility or contingency equipment for shipment or movement	47
D136 Identify and report equipment or supply problems	46
I255 Perform PMIs on down-converters	46
G233 Visually inspect waveguides	46
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	46
C107 Annotate security forms for facilities or security containers	46
P696 Perform pre- or post-deployment inspections	45

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 2E131 AND DAFSC 2E151 PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	DAFSC 2E131 (N=291)	DAFSC 2E151 (N=739)	DIFFERENCE
A72 Supervise military personnel	2	37	-35
A12 Counsel subordinates concerning personal matters	2	37	-35
B86 Counsel trainees on training progress	2	37	-35
A10 Conduct supervisory performance feedback sessions	1	35	-34
A45 Evaluate personnel for compliance with performance standards	1	34	-33
B84 Conduct OJT	25	57	-32
B95 Evaluate progress of trainees	2	33	-31
A15 Determine or establish work assignments or priorities	5	36	-31
B99 Maintain training records or files	20	50	-30
A75 Write performance reports or supervisory appraisals	1	30	-29

DAFSC 2E171. The 363 7-skill level personnel, representing 20 percent of the survey sample, perform an average of 96 tasks. Twenty-six percent of 7-skill level personnel are grouped in the Supervisory and Management Cluster (see Table 6). Table 7 shows they spend most of their time performing management and supervisory activities. Table 11 illustrates this high concentration. Seven-skill level personnel perform fewer tasks related to the configuration of certain equipment, and other various technical tasks than 5-skill levels, and distinguish themselves from 5-skill level personnel by the numbers performing supervisory tasks, such as writing replies to inspection reports, writing award recommendations, and determining logistics requirements (see Table 12).

ANG Skill-Level Descriptions

DAFSC 2E151. The 291 5-skill level ANG personnel, representing 16 percent of the survey sample, perform an average of 82 tasks. Nearly half of all 5-level ANG personnel surveyed were identified as members of the Mobile Cluster (see Table 6). Their time spent is fairly evenly spread out among all duties identified by the JI (see Table 7). Representative tasks performed are listed in Table 13. Five-skill level guard personnel perform mostly technical tasks, most of which are logically attributable to the Mobile Cluster (see Table 13).

DAFSC 2E171. The 162 7-skill level ANG personnel, representing 9 percent of the survey sample, perform an average of 127 tasks, the most of any skill group surveyed. Sixty-one percent of 7-skill level ANG personnel belong, like their 5-skill level counterparts, to the Mobile Cluster (see Table 6). Seven-skill level ANG personnel represent many of the supervisors in the Mobile Cluster, with nearly 20 percent of their time spent performing supervisory and managerial activities (see Table 7). Whereas the 5-skill level ANG personnel are performing the technical tasks of the Mobile Cluster, the 7-skill level ANG personnel spend their time supervising. Representative tasks of 7-skill level ANG personnel are shown in Table 14. Table 15 highlights the earlier point that the 7-skill level ANG personnel make up the supervisors, with a smaller emphasis on technical tasks than the 5-skill level ANG personnel.

Summary

For the AD personnel, 3- and 5-skill level airmen perform many tasks in common and both groups spend the majority of their relative job time on technical functions. Five-skill level personnel do perform some supervisory tasks, but neither group performs many training-type tasks. The 7-skill level personnel perform all aspects of a 5-skill level job, in addition to being introduced to many more supervisory functions. There are no 9-skill level personnel in the survey.

The ANG personnel reflect the same trends as do the AD personnel. The difference is the ANG personnel, both 5- and 7-skill levels, are concentrated mainly in the Mobile Wideband Cluster. Within this cluster, however, we see typical trends concerning tasks performed. The

TABLE 11
REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 2E171 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=363)
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	82
A12 Counsel subordinates concerning personal matters	68
A72 Supervise military personnel	68
A5 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	67
A45 Evaluate personnel for compliance with performance standards	67
A76 Write recommendations for awards or decorations	66
A10 Conduct supervisory performance feedback sessions	64
A15 Determine or establish work assignments or priorities	64
A75 Write performance reports or supervisory appraisals	64
A55 Inspect personnel for compliance with military standards	60
A13 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	59
A7 Conduct self-inspections or self-assessments	58
A18 Develop or establish work methods or procedures	56
C107 Annotate security forms for facilities or security containers	56
A9 Conduct supervisory orientations for newly assigned personnel	55
A56 Interpret policies, directives, or procedures for subordinates	55
B99 Maintain training records or files	55
A19 Develop or establish work schedules	54
A46 Evaluate personnel for promotion, demotion, reclassification, or special awards	54
D140 Inventory equipment, tools, parts, or supplies	53
E149 Access core automated maintenance system (CAMS) menus and data screens	53
B84 Conduct OJT	52
B86 Counsel trainees on training progress	52
D133 Coordinate supply-related matters with appropriate agencies	52
A33 Establish performance standards for subordinates	52
A77 Write replies to inspection reports	52
C110 Coordinate obtaining TDY orders with appropriate agencies	52
A65 Plan or schedule work assignments or priorities	52
D136 Identify and report equipment or supply problems	51

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 2E151 AND DAFSC 2E171 PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	DAFSC 2E151 (N=739)	DAFSC 2E171 (N=733)	DIFFERENCE
F180 Remove or replace air filters	59	24	35
G197 Perform PMIs on antenna systems	58	23	35
F171 Fabricate or repair equipment cables	64	33	31
N603 Configure modems	54	26	28
N602 Configure down-converters or up-converters	49	21	28
N600 Annotate master station logs	55	28	27
N605 Configure patch panels	53	26	27
N607 Establish communications links	53	26	27
I255 Perform PMIs on down-converters	46	20	26
<hr/>			
A5 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	21	67	-46
A76 Write recommendations for awards or decorations	26	66	-40
C110 Coordinate obtaining TDY orders with appropriate agencies	15	52	-37
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	46	82	-36
A77 Write replies to inspection reports	17	52	-35
C118 Initiate requests for TDY orders	9	44	-35
A69 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	15	50	-35
A75 Write performance reports or supervisory appraisals	30	64	-34
A46 Evaluate personnel for promotion, demotion, reclassification, or special awards	20	54	-34
A13 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	25	59	-34

TABLE 13
REPRESENTATIVE TASKS PERFORMED BY ANG 2E151 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=291)
P680 Fire weapons for qualification	82
P691 Pack mobility or contingency equipment for shipment or movement	73
F174 Install equipment grounds	72
P677 Don or doff chemical warfare personal protective clothing	70
P679 Erect tents	68
P692 Palletize mobility or contingency equipment for shipment or movement	64
P684 Install or remove mobile communications equipment	64
P686 Lay out power cables	63
P671 Anchor equipment vans or shelters	63
O669 Set up antenna systems	61
G233 Visually inspect waveguides	60
P694 Perform camouflage procedures	59
O648 Install or remove antenna systems	59
F175 Operationally check test equipment	58
G197 Perform PMIs on antenna systems	58
N605 Configure patch panels	58
D140 Inventory equipment, tools, parts, or supplies	57
P685 Install or remove radiation hazard fences	57
N607 Establish communications links	55
N603 Configure modems	55
G195 Assemble feedhorn assemblies	55
N604 Configure multiplexers	54
P690 Operate specialized mobility vehicles, such as M-series vehicles	54
P683 Install or remove facility grounds	54
F183 Remove or replace minor plug-in or screw-in electronic components	54
N608 Establish orderwire contacts	53
F171 Fabricate or repair equipment cables	51
I248 Align down-converters	51
I255 Perform PMIs on down-converters	51
N602 Configure down-converters or up-converters	49
N600 Annotate master station logs	49
P688 Mobilize tactical communications-electronics equipment	49
G230 Visually inspect feedhorn assemblies	49

TABLE 14
REPRESENTATIVE TASKS PERFORMED BY ANG 2E171 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=162)
P680 Fire weapons for qualification	86
P691 Pack mobility or contingency equipment for shipment or movement	79
F174 Install equipment grounds	78
P677 Don or doff chemical warfare personal protective clothing	78
P679 Erect tents	75
B84 Conduct OJT	73
D140 Inventory equipment, tools, parts, or supplies	73
P694 Perform camouflage procedures	72
P690 Operate specialized mobility vehicles, such as M-series vehicles	70
P692 Palletize mobility or contingency equipment for shipment or movement	70
P701 Transport mobility or contingency equipment to or from deployed locations	69
P682 Inspect packed or palletized mobility or contingency equipment prior to transport	67
P684 Install or remove mobile communications equipment	67
A72 Supervise military personnel	65
P671 Anchor equipment vans or shelters	65
P696 Perform pre- or post-deployment inspections	65
P686 Lay out power cables	64
B99 Maintain training records or files	64
G197 Perform PMIs on antenna systems	64
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	62
P685 Install or remove radiation hazard fences	62
G233 Visually inspect waveguides	62
F175 Operationally check test equipment	61
O648 Install or remove antenna systems	60
O669 Set up antenna systems	60
P683 Install or remove facility grounds	60
P687 Level shelters or vans	60
N605 Configure patch panels	60
B86 Counsel trainees on training progress	59
A15 Determine or establish work assignments or priorities	59
N607 Establish communications links	59

TABLE 15

TASKS WHICH BEST DIFFERENTIATE BETWEEN
 ANG DAFSC 2E151 AND 2E171 PERSONNEL
 (PERCENT MEMBERS PERFORMING)

TASKS	DAFSC		DIFFERENCE
	2E151 (N=291)	2E171 (N=162)	
A72 Supervise military personnel	13	65	-52
B95 Evaluate progress of trainees	9	58	-49
B94 Evaluate personnel to determine training needs	6	54	-48
B86 Counsel trainees on training progress	12	59	-47
B101 Plan or schedule training	8	55	-47
B84 Conduct OJT	27	73	-46
A19 Develop or establish work schedules	13	59	-46
A12 Counsel subordinates concerning personal matters	9	54	-45
A45 Evaluate personnel for compliance with performance standards	8	53	-45
A15 Determine or establish work assignments or priorities	16	59	-43
A9 Conduct supervisory orientations for newly assigned personnel	8	50	-42

5-skill level ANG personnel are doing the technical work, while the 7-skill level ANG personnel, in addition to performing all phases of the 5-skill level position, perform more tasks concerned with supervision, training and management. Table 16 shows a comparison between AD and ANG AFSC 2E1X1 personnel.

ANALYSIS OF AFMAN 36-2108 *SPECIALTY DESCRIPTIONS*

Survey data were compared to AFMAN 36-2108 *Specialty Descriptions* for AFSC 2E1X1, Satellite and Wideband Communications Equipment, dated 31 October 1994. The descriptions for the 3-, 5-, and 7-skill level members were accurate, depicting technical aspects of the job, as well as the increase in supervisory responsibilities previously described in the DAFSC analysis. The descriptions also capture the primary responsibilities of work identified in the job structure analysis.

TRAINING ANALYSIS

Occupational surveys provide information which can be used to assist in the development of training programs relevant to needs of personnel in their first enlistment. Factors used to evaluate entry-level AFSC 2E1X1 training include duties performed by members across career ladder jobs, percentages of members performing specific tasks, ratings of how much TE tasks should receive in formal training, and relative TD ratings.

First-Enlistment Personnel

In this study, there are 388 members in their first enlistment (1-48 months TAFMS) representing 21 percent of the survey sample. These personnel work primarily in the Mobile Cluster (see Figure 2). Accordingly, the largest percent of their time is spent performing mobility and contingency activities (see Table 17). Table 18 illustrates the tasks performed by first-enlistment personnel. Satellite operations, general repair, and mobility activities are common to all first-enlistment personnel, giving them a general understanding of the entire career ladder.

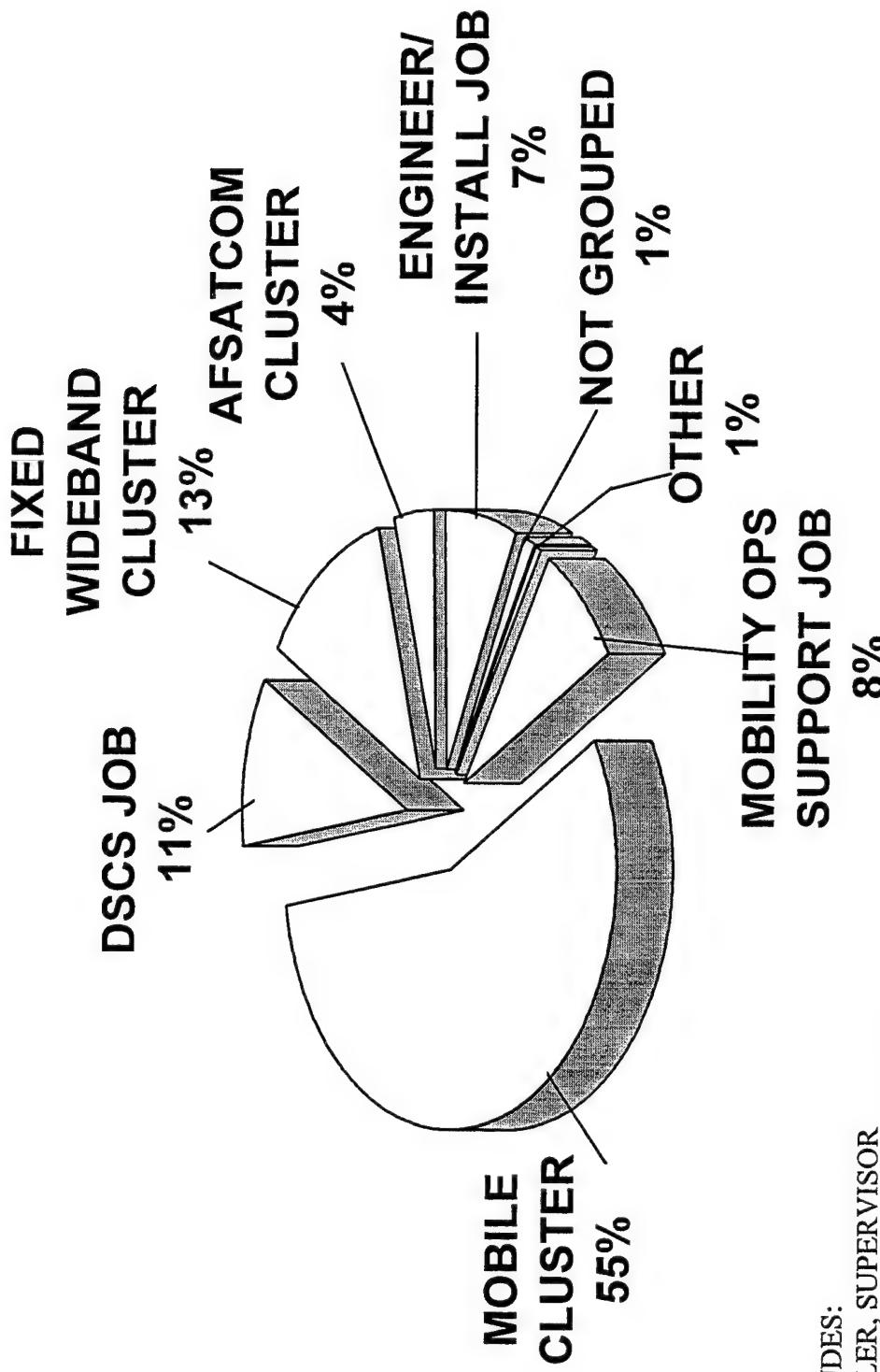
The satellite and wideband equipment that is maintained by at least 20 percent of AD first-job or first-enlistment personnel is shown in Table 19. Table 20 shows the test equipment used or operated by at least 25 percent of AD first-job or first-enlistment personnel.

TABLE 16

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY AND ANG DAFSC 2E1X1 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	ACTIVE DUTY DAFSC 2E1X1 (N=1392)	ANG DAFSC 2E1X1 (N=454)			DIFFERENCE
		ANG DAFSC (N=454)	ANG DAFSC (N=454)	ANG DAFSC (N=454)	
O648	Install or remove antenna systems	59	26	33	
O669	Set up antenna systems	61	29	32	
P692	Palletize mobility or contingency equipment for shipment or movement	66	35	31	
P679	Erect tents	70	39	31	
O650	Install or remove cabling between van sites	49	18	31	
P671	Anchor equipment vans or shelters	64	33	31	
P680	Fire weapons for qualification	84	53	31	
P691	Pack mobility or contingency equipment for shipment or movement	75	45	30	
E149	Access core automated maintenance system (CAMS) menus and data screens	33	66	-33	
C107	Annotate security forms for facilities or security containers	14	44	-30	
E166	Update personnel data files in CAMS	6	36	-30	
E161	Retrieve CAMS listings or reports	17	44	-27	
A75	Write performance reports or supervisory appraisals	6	33	-27	
A10	Conduct supervisory performance feedback sessions	12	35	-23	
D133	Coordinate supply-related matters with appropriate agencies	17	40	-23	
E167	Update workcenter training products in CAMS	8	31	-23	

FIRST-ENLISTMENT PERSONNEL JOBS



*OTHER INCLUDES:
JOB CONTROLLER, SUPERVISOR
MANAGEMENT CLUSTER, AND QUALITY
ASSURANCE JOB

FIGURE 2

TABLE 17
RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES BY
ACTIVE DUTY FIRST-ENLISTMENT AFSC 2E1X1 PERSONNEL

<u>DUTY AREA</u>	<u>PERCENT TIME SPENT</u>
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	4
B PERFORMING TRAINING ACTIVITIES	2
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEMS ACTIVITIES	4
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	6
E PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	6
F PERFORMING GENERAL REPAIR ACTIVITIES	10
G MAINTAINING FIXED AND MOBILE ANTENNA SYSTEMS	8
H MAINTAINING FIXED AND MOBILE TRACKING SYSTEMS	2
I MAINTAINING RECEIVERS AND DOWNLINK SYSTEMS	6
J MAINTAINING TRANSMITTERS AND UPLINK SYSTEMS	6
K MAINTAINING AFSATCOM SYSTEMS	3
L MAINTAINING MULTIPLEXERS, MODEMS, AND ASSOCIATED INTERFACE EQUIPMENT	5
M MAINTAINING COMMON OR MISCELLANEOUS SUBASSEMBLIES	7
N PERFORMING EQUIPMENT OR SATELLITE OPERATIONS ACTIVITIES	11
O PERFORMING COMMUNICATIONS EQUIPMENT INSTALLATION ACTIVITIES	4
P PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	15

TABLE 18
MOST COMMONLY PERFORMED TASKS FOR ACTIVE DUTY
FIRST-ENLISTMENT 2E1X1 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=388)
E149 Access core automated maintenance system (CAMS) menus and data screens	67
G197 Perform PMIs on antenna systems	65
F171 Fabricate or repair equipment cables	63
N600 Annotate master station logs	63
N605 Configure patch panels	62
F180 Remove or replace air filters	62
F174 Install equipment grounds	61
N607 Establish communications links	61
P680 Fire weapons for qualification	60
N603 Configure modems	60
N602 Configure down-converters or up-converters	59
G233 Visually inspect waveguides	58
F183 Remove or replace minor plug-in or screw-in electronic components	58
D140 Inventory equipment, tools, parts, or supplies	57
F188 Troubleshoot cable assemblies	57
I255 Perform PMIs on down-converters	57
N604 Configure multiplexers	56
F175 Operationally check test equipment	55
I248 Align down-converters	53
P691 Pack mobility or contingency equipment for shipment or movement	52
P694 Perform camouflage procedures	50
N611 Perform acquisition or tracking procedures	49
J313 Perform PMIs on up-converters	49
P696 Perform pre- or post-deployment inspections	48
D148 Store equipment, tools, parts, or supplies	48
E163 Review preventive maintenance schedules	47
N608 Establish orderwire contacts	47
C111 Destroy classified materials	46
J307 Perform PMIs on high-power amplifiers (HPAs)	46
F176 Perform preventive maintenance inspections (PMIs) on equipment safety devices, such as interlocks	45
F187 Solder or desolder connectors or hardwire circuits	45

TABLE 19

SATELLITE/WIDEBAND EQUIPMENT MAINTAINED BY MORE THAN 20 PERCENT
OF FIRST-JOB OR FIRST-ENLISTMENT AFSC 2E1X1 PERSONNEL

EQUIPMENT	<u>% MEMBERS MAINTAINING</u>	
	1ST JOB (N=129)	1ST ENL (N=388)
AN/TRC-170	40	35
AN/FCC-100	38	44
AN/TAC-1	22	24
TD-1337 Series	19	23
TD-1389 Series	17	20
AN/TSC-94 Series	23	24
AN/TSC-100 Series	19	21

TABLE 20
TEST EQUIPMENT OPERATED BY MORE THAN 25 PERCENT OF FIRST-JOB
OR FIRST-ENLISTMENT AFSC 2E1X1 PERSONNEL

EQUIPMENT	% MEMBERS MAINTAINING	
	1ST JOB (N=129)	1ST ENL (N=388)
Spectrum Analyzers	88	84
<u>ATTENUATORS</u>		
Decibel	42	46
Fixed	60	71
Variable	61	70
Audio Oscillators	24	27
Built-In Test Equipment	71	74
Frequency Counters	75	74
Desoldering Units	39	41
Directional Couplers	26	34
Dummy Loads	74	75
Frequency Measuring Sets	25	21
<u>GENERATORS</u>		
Noise	25	26
Radio Frequency (RF) Signal	42	50
Superhigh Frequency (SHF)	28	27
Sweep	29	36
Laptop or Notebook Computers	26	27
DB Meters	24	28
Power Meters	65	72
Analog Multimeters	49	56
Digital Multimeters	91	91
Oscilloscopes	84	82
Power Heads	19	26
DC Power Supplies	40	47
High Voltage Probes	17	28
Bit Error Rate Test Sets	35	47
Wattmeters	26	29
Waveguide Couplers or Adapters	37	47
Vibragrounds	35	38
Frequency Selective Voltmeters	31	28
Root Mean Square (RMS) Voltmeters	19	26

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary task factors that can help training development personnel decide which tasks to emphasize for entry-level training. These ratings, based on the judgments of senior career ladder NCOs at operational units, provide a rank-ordering of those tasks considered important for airmen with 1-48 months TAFMS. These tasks are ranked in order two ways, important to train (TE) and a measure of the relative difficulty of those tasks (TD). When combined with data on percentages of entry-level personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages performing, may be more appropriately planned for new OJT programs. Low task factor ratings may highlight tasks best omitted from training for new personnel. These decisions must be weighed against percentages of personnel performing tasks, command concerns, and criticality of tasks.

To assist training development personnel, AFOMS developed a computer program that uses these task factors and percentages of 1-48 months TAFMS personnel performing tasks to produce Automated Training Indicators (ATI). ATIs correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, AETCR 52-22. ATIs allow training developers to quickly focus attention on those tasks which are most likely to qualify for resident course consideration.

Tasks having the highest TE ratings for AFSC 2E1X1 AD personnel are listed in Table 21. Included for each task are percentages of 1-24 months TAFMS personnel performing the task (1ST JOB), percentages of 1-48 months TAFMS personnel performing the task (1ST ENL), and TD ratings. As illustrated in the table, tasks with the highest TE deal with the installation, removal, or configuration of certain equipment items. The performance of PMIs and troubleshooting of various equipment items also showed high TE ratings (see Table 21).

Table 22 lists the tasks having the highest TD ratings. The percentages of 1-24 months TAFMS, 1-48 months TAFMS, 3-, 5-, and 7-skill level personnel performing, and TE ratings are also included for each task. Many of the tasks with the highest TD ratings involve troubleshooting or repairing complex systems or pieces of equipment. Also among the tasks with high TD ratings are certain supervisory activities such as curricula, POI, and STS development, along with the initiation and/or coordination of host-tenant or interservice agreements (see Table 22).

Various lists of tasks, accompanied by TE and TD ratings, are contained in the **TRAINING EXTRACT** package and should be reviewed in detail by technical school personnel. For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.

TABLE 21
TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

<u>TASKS</u>	TNG EMP	PERCENT MEMBERS <u>PERFORMING</u>			TSK DIFF
		1ST JOB	1ST ENL		
F175 Operationally check test equipment	6.43	54	55	4.03	
N605 Configure patch panels	5.98	60	62	4.64	
N603 Configure modems	5.98	54	60	4.00	
N604 Configure multiplexers	5.92	48	56	4.66	
F174 Install equipment grounds	5.66	57	61	3.16	
P684 Install or remove mobile communications equipment	5.55	43	44	4.75	
N607 Establish communications links	5.53	60	61	5.72	
N602 Configure down-converters or up-converters	5.42	60	59	3.98	
N608 Establish orderwire contacts	5.28	47	47	4.27	
N611 Perform acquisition or tracking procedures	5.21	46	49	5.07	
P683 Install or remove facility grounds	5.17	26	31	3.34	
I248 Align down-converters	5.09	50	53	5.77	
G197 Perform PMIs on antenna systems	5.00	64	65	3.92	
I255 Perform PMIs on down-converters	4.92	50	57	5.17	
N616 Perform bit error rate tests	4.83	38	44	4.74	
N600 Annotate master station logs	4.81	58	63	1.75	
F188 Troubleshoot cable assemblies	4.77	46	57	4.23	
J351 Troubleshoot or repair up-converters	4.75	35	40	6.31	
C130 Safeguard classified materials	4.70	29	33	3.44	
P680 Fire weapons for qualification	4.70	57	60	2.59	
J303 Align up-converters	4.66	41	41	6.16	
F171 Fabricate or repair equipment cables	4.58	48	63	4.45	
F187 Solder or desolder connectors or hardwire circuits	4.58	34	45	4.26	
N619 Perform communications circuit fault isolation procedures	4.51	26	30	5.81	
P671 Anchor equipment vans or shelters	4.49	43	41	3.47	
N635 Perform receive signal level (RSL) checks	4.49	46	43	3.31	
P677 Don or doff chemical warfare personal protective clothing	4.47	40	44	3.14	
J307 Perform PMIs on high-power amplifiers (HPAs)	4.47	42	46	5.20	
P694 Perform camouflage procedures	4.45	50	50	3.77	

TE MEAN = 2.07; S.D. = 1.14 (HIGH = 3.21)

TD MEAN = 5.00; S.D. = 1.00

TABLE 22

TASKS WITH HIGHEST DIFFICULTY RATINGS

TASKS	PERCENT MEMBERS PERFORMING					
	TSK DIFF	1ST JOB	1ST ENL	2E131	2E151	2E171
A26 Draft budget requirements	7.08	0	0	0	6	35
I280 Troubleshoot or repair cryogenic refrigeration systems	7.07	1	3	3	2	1.19
A11 Coordinate host-tenant or interservice agreements with appropriate agencies	7.00	0	1	1	6	.09
A53 Initiate host-tenant or interservice agreements	6.91	0	0	0	1	.11
A36 Evaluate budget requirements	6.87	0	1	0	5	.17
I287 Troubleshoot or repair parametric amplifiers	6.83	3	7	7	6	4
J347 Troubleshoot or repair SCR cabinets	6.82	3	5	5	6	4
J339 Troubleshoot or repair high-voltage power supplies	6.80	29	35	33	31	16
I250 Align parametric amplifiers	6.77	5	10	9	9	4
J340 Troubleshoot or repair HPAs	6.74	36	39	37	37	14
J338 Troubleshoot or repair FM transmitters	6.73	7	9	8	11	9
I290 Troubleshoot or repair receive combiners	6.71	3	5	5	7	4
B88 Develop formal course curricula, plans of instructions (POIs), or specialty training standards (STTs)	6.67	1	1	1	6	.28
A61 Plan deployments of equipment or personnel	6.66	2	2	1	13	36
J343 Troubleshoot or repair line-voltage regulators	6.65	2	3	3	5	4
J345 Troubleshoot or repair power amplifier monitoring systems	6.63	2	6	5	9	8
J337 Troubleshoot or repair FM modulators	6.62	5	8	7	10	7
J336 Troubleshoot or repair digital transmitters	6.61	2	7	7	9	7
I283 Troubleshoot or repair FM detectors or discriminators	6.60	3	3	3	4	3
L482 Troubleshoot or repair SSMA subassemblies	6.60	7	7	5	7	3
H240 Troubleshoot or repair tracking demodulators	6.60	8	13	14	10	5
B91 Develop training programs, plans, or procedures	6.59	2	4	2	17	34
I284 Troubleshoot or repair FM receivers	6.59	5	7	7	9	7
O659 Perform path profile procedures	6.58	1	1	1	5	7

TD MEAN = 5.00; S.D. = 1.00
 TE MEAN = 2.07; S.D. = 1.14 (HIGH = 3.21)

Course Training Standard (CTS) Analysis

A comprehensive review of the AFSC 2E1X1 CTS was made by comparing survey data to CTS elements. Normally, this process is performed on the Specialty Training Standard (STS) of a given career ladder. However, in this case, the AFSC 2E1X1 STS was under development at the time the analysis process was performed. Therefore, the CTS was used in place of the STS as it was the only document available. SMEs matched JI tasks to appropriate CTS sections and subsections. A complete listing, displaying percent members performing tasks, TE and TD ratings for each task, along with CTS matching, has been forwarded to the technical school for use in further review of training documents. CTS elements with performance objectives were reviewed in terms of TE, TD, and percent members performing information using the guidance provided in AETCI 36-2601. Typically, tasks performed by 20 percent or more personnel in appropriate experience or skill-level groups, such as first-enlistment (1-48 months TAFMS), and 5- and 7-skill level groups, should be considered for inclusion in the CTS. Likewise, tasks with less than 20 percent performing in all of the groups should be considered for deletion from the CTS.

The review of the current CTS showed a fair level of support. Of the paragraphs that went unsupported, none of them possessed a high TE rating. The term 'high', meaning the TE rating for a given task matched to a CTS item would need to be at least one standard deviation greater than the overall mean TE rating. This was not the case for any tasks matched to any of the unsupported CTS items found. This fact, accompanied with the low percent members performing data, makes a much stronger case for the deletion of these unsupported areas from the CTS. Unsupported CTS items included: operational checks and/or the troubleshooting of equipment such as the ATU, MTU, ACJM, AN/FCC-98, AN/FCC-100, AN/FRC-127, AN/FRC-173, and performing power measurement calculations. Further information concerning the unsupported areas of the CTS can be seen in Table 23 of this report.

Tasks not matched to any element of the CTS are listed at the end of the computer listing located in associated training documents. These were reviewed to determine if any tasks concentrate around particular functions or jobs. A sample of technical tasks, performed by 20 percent or more criterion group members not referenced to the CTS, is listed in Table 24. Installing mobile communications equipment, facility grounds and equipment grounds show a very high TE rating and percent members performing and should be included in the CTS if feasible. Other tasks with similarly high ratings which should be considered for CTS inclusion are: aligning up-converters, down-converters and intermediate frequency amplifiers; troubleshooting cable assemblies; fabricate or repair equipment cables; solder or desolder connectors or hardwire circuits; visually inspect waveguides, troubleshoot or repair high power amplifiers, set up antenna systems, and sight antenna systems (see Table 24). Training personnel should review these and other unreferenced tasks to determine if CTS inclusion is warranted.

TABLE 23

CTS ITEMS NOT SUPPORTED BY SURVEY DATA

CTS ITEMS/TASKS	TNG EMP	PERCENT MEMBERS PERFORMING				TSK DIFF
		1ST JOB	1ST ENL	2E131	2E151	
1.3 Perform power measurement calculations						
N612	Perform amplitude linearity tests	1.85	3	7	6	3
N622	Perform frequency response tests	2.08	4	8	7	5
N630	Perform noise-to-power ratio (NPR) tests	2.04	4	4	2	2
2.3 Perform an operational check of an AN/FCC-98 voice data time division multiplexer (TDM) in accordance with applicable technical data						
L427	Align pulse code modulation (PCM) multiplexers	2.51	5	6	6	4
M506	Align analog-to-digital or digital-to-analog converters	2.09	6	9	8	4
3.1 Perform an operational check of an AN/FCC-100 low speed time division multiplexer (TDM) in accordance with applicable technical data						
L431	Align time division multiplexers (TDMs)	2.68	11	15	14	10
4.2 Perform an operational check of an SHF tactical satellite equipment encoder-decoder in accordance with applicable technical data						
L469	Troubleshoot or repair encoders/decoders	2.13	6	7	7	4
4.3 Troubleshoot and repair an SHF tactical satellite equipment encoder-decoder in accordance with applicable technical data						
L469	Troubleshoot or repair encoders/decoders	2.13	6	7	7	4

TD MEAN = 5.00; S.D. = 1.00
 TE MEAN = 2.07; S.D. = 1.14 (HIGH = 3.21)

TABLE 23 (CONTINUED)

CTS ITEMS NOT SUPPORTED BY SURVEY DATA

CTS ITEM/TASKS	PERCENT MEMBERS PERFORMING					TSK DIFF
	TNG EMP	1ST JOB	1ST ENL	2E131	2E151	
6.1 Perform an operational check of an Autotracking Unit (ATU) in accordance with applicable technical data						
F177 Perform software configurations on computer-based systems	2.89	14	17	17	18	18
6.3 Perform an operational check of a Memory Tracking Unit (MTU) in accordance with applicable technical data						
F177 Perform software configurations on computer-based systems	2.89	14	17	17	18	18
7.1 Monitor a DSCS terminal using the control monitor and alarm (CMA) equipment in accordance with applicable technical data						
F177 Perform software configurations on computer-based systems	2.89	14	17	17	18	18
8.1 Perform operational checks on an AN/FRC-173 digital line of sight (LOS) radio in accordance with applicable technical data						
I281 Troubleshoot or repair digital receivers	3.19	3	7	7	8	9
8.2 Troubleshoot and repair an AN/FRC-173 digital LOS radio in accordance with applicable technical data						
I281 Troubleshoot or repair digital receivers	3.19	3	7	7	8	9

TD MEAN = 5.00; S.D. = 1.00
 TE MEAN = 2.07; S.D. = 1.14 (HIGH = 3.21)

TABLE 23 (CONTINUED)

CTS ITEMS NOT SUPPORTED BY SURVEY DATA

CTS ITEM/TASKS	TNG EMP	PERCENT MEMBERS PERFORMING				TSK DIFF
		1ST JOB	1ST ENL	2E131	2E151	
8.4 Troubleshoot and repair an AN/FRC-127 analog LOS radio in accordance with applicable technical data						
M569 Troubleshoot or repair baseband amplifiers		1.94	5	6	6	5.87
9.6 Perform an operational check of an Anti-Jam Control (AJCM) in accordance with applicable technical data		2.00	7	7	5	6.60
L482 Troubleshoot or repair SSMA subassemblies						
11.1 perform an operational check on TR-TAC cryptographic equipment in accordance with applicable technical data						
L432 Configure cryptographic equipment	3.04 1.32	18 6	18 7	16 8	19 10	4.99 6.32
M573 Troubleshoot or repair cryptographic equipment						

TD MEAN = 5.00; S.D. = 1.00
 TE MEAN = 2.07; S.D. = 1.14 (HIGH = 3.21)

TABLE 24

TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE
CRITERION GROUP PERSONNEL AND NOT REFERENCED TO THE CTS

TASKS	PERCENT MEMBERS PERFORMING					TSK DIFF
	TNG EMP	1ST JOB	1ST ENL	2E131	2E151	
F175 Operationally check test equipment	6.43	54	55	55	60	37
F174 Install equipment grounds	5.66	57	61	60	54	31
P684 Install or remove mobile communications equipment	5.55	43	44	41	44	26
P683 Install or remove facility grounds	5.17	26	31	31	32	22
I248 Align down-converters	5.09	50	53	53	43	21
N600 Annotate master station logs	4.81	58	63	65	55	28
F188 Troubleshoot cable assemblies	4.77	46	57	55	52	30
C130 Safeguard classified materials	4.70	29	33	31	43	43
J303 Align up-converters	4.66	41	41	41	37	17
F171 Fabricate or repair equipment cables	4.58	48	63	58	64	33
F187 Solder or desolder connectors or hardwire circuits	4.58	34	45	44	44	23
P671 Anchor equipment vans or shelters	4.49	43	41	41	35	21
P677 Don or doff chemical warfare personal protective clothing	4.47	40	44	42	48	38
P694 Perform camouflage procedures	4.45	50	50	48	42	30
F176 Perform preventive maintenance inspections (PMIs) on equipment safety devices, such as interlocks	4.43	47	45	45	34	15
G233 Visually inspect waveguides	4.36	58	58	58	46	23
J340 Troubleshoot or repair HPAs	4.25	36	39	37	37	14
F183 Remove or replace minor plug-in or screw-in electronic components	4.19	52	58	57	53	28
D140 Inventory equipment, tools, parts, or supplies	4.13	46	57	56	63	53
I251 Align receive intermediate frequency (IF) amplifiers	3.94	16	26	26	18	9
D139 Initiate requisitions for equipment, tools, parts, or supplies	3.64	24	29	27	44	48
D135 Evaluate serviceability of equipment, tools, parts, or supplies	3.58	32	44	42	54	51
O669 Set up antenna systems	3.58	41	40	40	32	13
O670 Sight antenna systems	3.32	33	32	32	28	15

TD MEAN = 5.00; S.D. = 1.00
TE MEAN = 2.07; S.D. = 1.14 (HIGH = 3.21)

JOB SATISFACTION ANALYSIS

An examination of job satisfaction indicators can be very useful for career ladder managers as they attempt to determine possible factors affecting job performance of career ladder airmen. Job satisfaction data can be expanded to provide indications of general attitudes within specific DAFSC groups.

With this in mind, job satisfaction responses for AD AFSC 2E1X1 personnel were analyzed and provide the following comparisons: (1) among TAFMS groups of the AFSC 2E1X1 career ladder and a comparative sample of mission equipment management personnel surveyed in 1996; and (2) between respondents to both current and previous OSRs.

Table 25 shows the comparison of TAFMS group data of AFSC 2E1X1 respondents to a comparative sample of other mission equipment management career ladders surveyed the previous year. These data provide a relative measure of how AFSC 2E1X1 personnel job satisfaction responses compare with similar Air Force specialties. AFSC 2E1X1 personnel show lower satisfaction ratings than their comparative sample counterparts in all satisfaction areas, and across all TAFMS groups.

An indication of changes in job satisfaction perceptions within the career ladder over time is provided in Table 26. Table 26 compares TAFMS group data for current survey respondents to that of previous survey respondents. The largest disparity between the two groups comes in expressed job interest of 1-48 months and 49-96 months TAFMS groups and sense of accomplishment felt by personnel with 1-48 months TAFMS. Here, members of the current survey average nearly 10 percent lower in satisfaction than members of the previous surveys. Other than these areas, however, the ratings between current and previous survey respondents are very similar, and raise no significant difference (see Table 26).

Finally, job satisfaction data for identified jobs are provided in Table 27. Generally, job satisfaction data are high for personnel in identified jobs. Two jobs, however, did show some fairly low satisfaction ratings. These jobs were the Mobility Operations Support Job and members of the AFSATCOM Cluster. The lowest rating for these particular job group personnel came in the area of expressed job interest. Of all jobs identified, Instructors indicate they are the most satisfied with their jobs overall (see Table 27).

Summary

AFSC 2E1X1 members are less satisfied with their jobs in all areas than members of a comparative sample of mission equipment management career ladder personnel. With the exception of the low job interest and sense of accomplishment ratings given by current AFSC survey respondents in certain TAFMS groups, members of the current sample are relatively equal in their indicated satisfaction with their jobs as previous AFSC 2E1X1 (formerly 304X0, 304X6)

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2E1X1
 TAFMS GROUPS IN CURRENT STUDY TO A COMPARATIVE SAMPLE
 (PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS			49-96 MONTHS TAFMS			27+ MONTHS TAFMS		
	AFSC 2E1X1 (N=388)	COMP SAMPLE (N=4506)	AFSC 2E1X1 (N=326)	AFSC 2E1X1 (N=3339)	COMP SAMPLE (N=679)	AFSC 2E1X1 (N=679)	COMP SAMPLE (N=9548)		
EXPRESSED JOB INTEREST:									
INTERESTING	64	75	62	73	72	78			
SO-SO	17	16	22	16	19	15			
DULL	19	9	16	11	10	8			
PERCEIVED USE OF TALENTS:									
FAIRLY WELL TO PERFECT	71	83	73	83	82	85			
NONE TO VERY LITTLE	29	17	28	17	18	15			
PERCEIVED USE OF TRAINING:									
FAIRLY WELL TO PERFECT	74	89	67	84	67	81			
NONE TO VERY LITTLE	26	11	33	16	33	18			
SENSE OF ACCOMPLISHMENT FROM JOB:									
SATISFIED	58	73	60	72	68	74			
NEUTRAL	18	14	16	13	10	11			
DISSATISFIED	24	13	24	15	22	15			
REENLISTMENT INTENTIONS:									
YES OR PROBABLY YES	49	63	56	73	73	78			
NO OR PROBABLY NO	51	36	43	26	8	7			
WILL RETIRE	-	1	-	1	19	15			

- Denotes 0 percent

NOTE: Columns may not add to 100 due to rounding or non-response
 Comparative data are from AFSCS 2A0X1B, 2A1X1, 2A1X7, 2A3X3, 2A6X1A/B, 2A6X2, 2E1X4, 2E4X1, 2E5X1, 2E6X1, 2E6X2, 2P0X1 surveyed in 1996

TABLE 26

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2E1X1
 TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDIES
 (PERCENT MEMBERS RESPONDING)

		1-48 MONTHS TAFMS			49-96 MONTHS TAFMS			97+ MONTHS TAFMS		
		AFSC 1988 AFSC 2E1X1 304X0 (N=388)	1987 AFSC 304X6 (N=498)	AFSC 1988 AFSC 2E1X1 (N=379)	AFSC 1988 AFSC 2E1X1 (N=326)	AFSC 1988 AFSC 304X0 (N=591)	AFSC 1987 AFSC 304X6 (N=192)	AFSC 1988 AFSC 2E1X1 (N=672)	1988 AFSC 304X0 (N=744)	1987 AFSC 304X6 (N=202)
EXPRESSED JOB INTEREST:										
INTERESTING	64	73	75	62	71	71	72	73	74	74
SO-SO	17	17	12	22	16	12	19	15	13	13
DULL	19	9	12	16	13	17	10	11	11	11
PERCEIVED USE OF TALENTS:										
FAIRLY WELL TO PERFECT	71	77	75	73	78	73	82	78	75	75
NONE TO VERY LITTLE	29	22	24	28	22	26	18	22	24	24
PERCEIVED USE OF TRAINING:										
FAIRLY WELL TO PERFECT	74	68	76	67	64	71	67	68	67	67
NONE TO VERY LITTLE	26	31	24	33	35	28	33	32	32	32
SENSE OF ACCOMPLISHMENT FROM JOB:										
SATISFIED	58	68	N/A	60	63	N/A	68	66	N/A	N/A
NEUTRAL	18	11	N/A	16	14	N/A	10	12	N/A	N/A
DISSATISFIED	24	20	N/A	24	23	N/A	22	22	N/A	N/A
REENLISTMENT INTENTIONS:										
YES OR PROBABLY YES	49	55	50	56	63	56	73	69	68	68
NO OR PROBABLY NO	51	44	50	43	36	44	8	15	14	14
WILL RETIRE	-	-	-	-	-	-	19	15	17	17

- Denotes 0 percent

NOTE: Columns may not add to 100 percent due to rounding or non-response

TABLE 27

JOB SATISFACTION INDICATORS FOR AFSC 2E1X1 JOBS
(PERCENT MEMBERS RESPONDING)

	MOBILITY OPS. SUPPORT JOB (N=65)	MOBILE CLUSTER (N=681)	DSCS JOB (N=117)	FIXED WIDEBAND CLUSTER (N=128)	JOB CONTROLLER (N=20)
<u>EXPRESSED JOB INTEREST:</u>					
INTERESTING	45	78	62	70	60
SO-SO	34	13	21	19	20
DULL	22	9	16	11	20
<u>PERCEIVED USE OF TALENTS:</u>					
FAIRLY WELL TO PERFECT	60	85	78	78	60
NONE TO VERY LITTLE	40	15	22	22	40
<u>PERCEIVED USE OF TRAINING:</u>					
FAIRLY WELL TO PERFECT	59	86	81	79	55
NONE TO VERY LITTLE	42	14	19	21	45
<u>SENSE OF ACCOMPLISHMENT FROM JOB:</u>					
SATISFIED	49	74	56	63	60
NEUTRAL	20	11	13	18	10
DISSATISFIED	31	15	31	20	30
<u>REENLISTMENT INTENTIONS:</u>					
YES OR PROBABLY YES	57	69	60	66	55
NO OR PROBABLY NO	40	23	39	27	35
WILL RETIRE	3	7	1	6	10

NOTE: Columns may not add to 100 percent due to rounding or non-response

TABLE 27 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 2E1X1 JOBS
(PERCENT MEMBERS RESPONDING)

	SUPERVISOR MANAGEMENT CLUSTER (N=143)	QUALITY ASSURANCE JOB (N=45)	AFSATCOM CLUSTER (N=38)	ENGINEERING/ INSTALLATION JOB (N=118)	INSTRUCTOR JOB (N=19)
EXPRESSED JOB INTEREST:					
INTERESTING	68	73	39	71	89
SO-SO	21	24	37	15	5
DULL	11	2	24	14	5
PERCEIVED USE OF TALENTS:					
FAIRLY WELL TO PERFECT	83	86	58	72	89
NONE TO VERY LITTLE	17	13	42	27	11
PERCEIVED USE OF TRAINING:					
FAIRLY WELL TO PERFECT	76	67	48	54	84
NONE TO VERY LITTLE	24	33	53	45	16
SENSE OF ACCOMPLISHMENT FROM JOB:					
SATISFIED	65	67	50	74	84
NEUTRAL	7	16	21	12	-
DISSATISFIED	28	18	29	14	16
REENLISTMENT INTENTIONS:					
YES OR PROBABLY YES	68	80	61	66	74
NO OR PROBABLY NO	8	9	39	24	16
WILL RETIRE	23	11	-	10	5

- Denotes 0 percent

NOTE: Columns may not add to 100 percent due to rounding or non-response

personnel surveyed in 1988 and 1987, respectively. Job satisfaction data of specific career ladder jobs show most job members are satisfied with their jobs. Only the Mobility Operations Support Job and AFSATCOM Cluster personnel appear genuinely dissatisfied with their work.

IMPLICATIONS

This survey was conducted primarily to provide training personnel with current information on the Satellite and Wideband Communications Equipment specialty for use in reviewing current training programs and training documents. Results indicate the jobs have changed somewhat in classification and scope since the last surveys in 1988 and 1987, but current members still follow a typical career progression pattern. The present classification structure, as described in AFMAN 36-2108 *Specialty Descriptions*, accurately portrays the jobs in this study.

Analysis of career ladder documents indicates a fair level of support for the current CTS. All of the unsupported CTS elements should be reviewed as to their necessity for inclusion in the CTS. These items received little to no support from either percent members performing data or TE ratings. Also, there were many technical tasks performed by a high percentage of members and possessing a very high TE rating which could not be matched to the CTS. These tasks should be reviewed by career field functional managers and technical training SMEs as to the possible need for their inclusion in the CTS.

Some job satisfaction problems appear to exist in this specialty. AFSC 2E1X1 members are less satisfied in all areas when compared to members of a comparative sample of mission equipment management specialty personnel. Also, although current personnel are less positive about their job interest than previous AFSC 2E1X1 (formerly 304X0, 304X6) personnel surveyed in 1988 and 1987 respectively, individual job ratings by current personnel indicate they are fairly satisfied overall.

The findings of this OSR come directly from survey data collected from AFSC 2E1X1 personnel worldwide. Much of the data are compiled into extracts which are excellent tools in the decision-making process. These data extracts should be used when training or utilization decisions are made.

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY
MEMBERS OF CAREER LADDER JOBS

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TABLE A1
MOBILITY OPERATIONS SUPPORT JOB
(STG309)

TASKS	PERCENT MEMBERS PERFORMING (N=65)
P679 Erect tents	98
P691 Pack mobility or contingency equipment for shipment or movement	97
P694 Perform camouflage procedures	94
P680 Fire weapons for qualification	94
P696 Perform pre- or post-deployment inspections	88
P692 Palletize mobility or contingency equipment for shipment or movement	86
P690 Operate specialized mobility vehicles, such as M-series vehicles	85
P677 Don or doff chemical warfare personal protective clothing	85
P701 Transport mobility or contingency equipment to or from deployed locations	82
P684 Install or remove mobile communications equipment	78
P697 Perform site security	74
P695 Perform decontamination procedures for chemical warfare agents	71
P686 Lay out power cables	63
P685 Install or remove radiation hazard fences	62
P688 Mobilize tactical communications-electronics equipment	60
P682 Inspect packed or palletized mobility or contingency equipment prior to transport	58
P689 Operate field power converters or generators	58
P671 Anchor equipment vans or shelters	57
P698 Perform site surveys	55
D140 Inventory equipment, tools, parts, or supplies	49
E149 Access core automated maintenance system (CAMS) menus and data screens	45
G197 Perform PMIs on antenna systems	45
P683 Install or remove facility grounds	42
F174 Install equipment grounds	42
B84 Conduct OJT	40
G195 Assemble feedhorn assemblies	38
P687 Level shelters or vans	37

TABLE A2

MOBILE CLUSTER
(STG 273)

TASKS	PERCENT MEMBERS PERFORMING (N=681)
P691 Pack mobility or contingency equipment for shipment or movement	95
P680 Fire weapons for qualification	93
P694 Perform camouflage procedures	92
P684 Install or remove mobile communications equipment	91
P679 Erect tents	89
N607 Establish communications links	89
P690 Operate specialized mobility vehicles, such as M-series vehicles	88
G197 Perform PMIs on antenna systems	88
P685 Install or remove radiation hazard fences	88
N605 Configure patch panels	87
G233 Visually inspect waveguides	86
P686 Lay out power cables	86
F174 Install equipment grounds	86
N600 Annotate master station logs	86
P671 Anchor equipment vans or shelters	85
P688 Mobilize tactical communications-electronics equipment	84
P701 Transport mobility or contingency equipment to or from deployed locations	84
P696 Perform pre- or post-deployment inspections	84
N603 Configure modems	84
P677 Don or doff chemical warfare personal protective clothing	83
N604 Configure multiplexers	82
N602 Configure down-converters or up-converters	82
N608 Establish orderwire contacts	82
I255 Perform PMIs on down-converters	79
F180 Remove or replace air filters	78
P692 Palletize mobility or contingency equipment for shipment or movement	78
G195 Assemble feedhorn assemblies	77
P687 Level shelters or vans	76
D140 Inventory equipment, tools, parts, or supplies	76
P697 Perform site security	76
P683 Install or remove facility grounds	75
G230 Visually inspect feedhorn assemblies	74
I248 Align down-converters	73

TABLE A3
DEFENSE SATELLITE COMMUNICATIONS SYSTEMS JOB
(STG220)

TASKS	PERCENT MEMBERS PERFORMING (N=117)
N602 Configure down-converters or up-converters	94
N603 Configure modems	94
N600 Annotate master station logs	93
G197 Perform PMIs on antenna systems	92
N601 Compose and transmit messages using teletype equipment	90
N609 Initiate satellite equipment reports (SERs)	90
C111 Destroy classified materials	89
I255 Perform PMIs on down-converters	87
J351 Troubleshoot or repair up-converters	87
E149 Access core automated maintenance system (CAMS) menus and data screens	86
J303 Align up-converters	85
J313 Perform PMIs on up-converters	85
N616 Perform bit error rate tests	85
F180 Remove or replace air filters	85
C120 Inventory classified materials	84
N605 Configure patch panels	84
N617 Perform carrier noise density checks (C/KTs)	83
I248 Align down-converters	80
L437 Perform modem link characterization tests	79
L436 Perform modem bit error rate tests	79
J340 Troubleshoot or repair HPAs	77
F175 Operationally check test equipment	76
N611 Perform acquisition or tracking procedures	76
I282 Troubleshoot or repair down-converters, other than tracking down-converters	75
J307 Perform PMIs on high-power amplifiers (HPAs)	75
F183 Remove or replace minor plug-in or screw-in electronic components	74
H236 Perform PMIs on tracking systems	74
F171 Fabricate or repair equipment cables	73
N607 Establish communications links	72
F188 Troubleshoot cable assemblies	70
J319 Remove or replace HPA components	68

TABLE A4
**FIXED WIDEBAND CLUSTER
(STG085)**

TASKS	PERCENT MEMBERS PERFORMING (N=128)
F171 Fabricate or repair equipment cables	87
F183 Remove or replace minor plug-in or screw-in electronic components	86
F188 Troubleshoot cable assemblies	85
E149 Access core automated maintenance system (CAMS) menus and data screens	82
F175 Operationally check test equipment	81
F179 Remove fixed communications equipment	79
D140 Inventory equipment, tools, parts, or supplies	77
F180 Remove or replace air filters	77
F181 Remove or replace circuit board soldered electronic components	77
F187 Solder or desolder connectors or hardwire circuits	77
F172 Install cable assemblies or internal wiring	74
F173 Install cross-connections	73
F174 Install equipment grounds	70
L443 Remove or replace DC power supplies	70
D148 Store equipment, tools, parts, or supplies	69
N604 Configure multiplexers	69
L439 Perform PMIs on multiplexers and associated interface equipment	68
M587 Troubleshoot or repair patch panels	67
E163 Review preventive maintenance schedules	66
D137 Initiate documentation to turn in excess or surplus property	66
M538 Remove or replace built-in test equipment (BITE)	65
B84 Conduct OJT	63
L455 Remove or replace multiplexers	63
L465 Troubleshoot or repair DC power supplies	63
E165 Update maintenance data collection (MDC) data using CAMS	63
D136 Identify and report equipment or supply problems	63
D147 Pick up or deliver equipment, tools, parts, or supplies	63
D135 Evaluate serviceability of equipment, tools, parts, or supplies	60
E161 Retrieve CAMS listings or reports	59
L477 Troubleshoot or repair multiplexers, other than teletype multiplexers	59
M497 Adjust local oscillators	59
N616 Perform bit error rate tests	58

TABLE A5

JOB CONTROLLER
(STG329)

TASKS	PERCENT MEMBERS PERFORMING (N=20)
E149 Access core automated maintenance system (CAMS) menus and data screens	100
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	90
D136 Identify and report equipment or supply problems	90
E161 Retrieve CAMS listings or reports	85
E151 Analyze CAMS data	85
E163 Review preventive maintenance schedules	80
E162 Review equipment maintenance records	80
C124 Maintain or update status indicators, such as boards, graphs, or charts	80
P680 Fire weapons for qualification	80
E165 Update maintenance data collection (MDC) data using CAMS	75
D133 Coordinate supply-related matters with appropriate agencies	75
E164 Update historical reports in CAMS	75
P679 Erect tents	75
P694 Perform camouflage procedures	75
P677 Don or doff chemical warfare personal protective clothing	75
D132 Coordinate maintenance of equipment with appropriate agencies	70
P691 Pack mobility or contingency equipment for shipment or movement	70
E168 Verify accuracy of CAMS daily inputs	65
C108 Compile data for records, reports, logs, or trend analyses	65
P692 Palletize mobility or contingency equipment for shipment or movement	65
P690 Operate specialized mobility vehicles, such as M-series vehicles	65
C122 Maintain administrative files	65
B99 Maintain training records or files	65
E158 Initiate or annotate equipment maintenance records	60
D140 Inventory equipment, tools, parts, or supplies	60
P693 Participate in mobility exercise planning meetings	60

TABLE A6
SUPERVISORY AND MANAGEMENT CLUSTER
(STG259)

TASKS	PERCENT MEMBERS PERFORMING (N=143)
A12 Counsel subordinates concerning personal matters	92
A72 Supervise military personnel	91
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	91
A15 Determine or establish work assignments or priorities	90
A10 Conduct supervisory performance feedback sessions	89
A9 Conduct supervisory orientations for newly assigned personnel	89
A76 Write recommendations for awards or decorations	87
A7 Conduct self-inspections or self-assessments	86
A45 Evaluate personnel for compliance with performance standards	85
A5 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	84
A56 Interpret policies, directives, or procedures for subordinates	84
A18 Develop or establish work methods or procedures	83
A75 Write performance reports or supervisory appraisals	83
A55 Inspect personnel for compliance with military standards	83
A65 Plan or schedule work assignments or priorities	81
A33 Establish performance standards for subordinates	79
A77 Write replies to inspection reports	79
A19 Develop or establish work schedules	78
B86 Counsel trainees on training progress	78
A46 Evaluate personnel for promotion, demotion, reclassification, or special awards	77
B99 Maintain training records or files	77
A13 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	76
B84 Conduct OJT	76
A24 Direct training functions	75
E149 Access core automated maintenance system (CAMS) menus and data screens	73
A69 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	73
A52 Initiate actions required due to substandard performance of personnel	73

TABLE A7
**QUALITY ASSURANCE JOB
(STG279)**

TASKS	PERCENT MEMBERS PERFORMING (N=45)
A45 Evaluate personnel for compliance with performance standards	96
A37 Evaluate inspection report findings or inspection procedures	93
A73 Write inspection reports	93
A8 Conduct staff assistance visits, inspections, or audits	91
E162 Review equipment maintenance records	89
C108 Compile data for records, reports, logs, or trend analyses	87
A6 Conduct safety inspections of equipment or facilities	87
E149 Access core automated maintenance system (CAMS) menus and data screens	87
A48 Evaluate safety or security programs	84
D135 Evaluate serviceability of equipment, tools, parts, or supplies	80
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	80
B93 Evaluate effectiveness of training programs, plans, or procedures	78
E163 Review preventive maintenance schedules	78
A38 Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) Program	76
A7 Conduct self-inspections or self-assessments	73
A22 Develop self-inspection or self-assessment program checklists	73
A43 Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	71
A32 Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	71
C126 Maintain technical order libraries	69
A14 Determine or establish publication requirements	69
C129 Review technical order changes	69
E152 Coordinate deficiency, service, or status reports, such as product quality deficiency reports (PQDRs) with appropriate agencies	69

TABLE A8
AFSATCOM CLUSTER
(STG100)

TASKS	PERCENT MEMBERS PERFORMING (N=38)
K355 Operationally check AFSATCOM modems	100
K367 Operationally check receiver-transmitter (RT) controls	97
K392 Troubleshoot AFSATCOM systems to identify faulty units	89
K360 Operationally check emergency action message (EAM) equipment	82
E149 Access core automated maintenance system (CAMS) menus and data screens	79
K375 Remove or replace AFSATCOM modems	79
K373 Perform PMIs on AFSATCOM modems	79
K361 Operationally check fault indicator panels (FIPs)	76
G197 Perform PMIs on antenna systems	71
D148 Store equipment, tools, parts, or supplies	71
K354 Configure Air Force satellite communications (AFSATCOM) terminal equipment	71
K356 Operationally check automatic send and receive (ASR) units	66
F180 Remove or replace air filters	63
F175 Operationally check test equipment	61
D140 Inventory equipment, tools, parts, or supplies	61
D135 Evaluate serviceability of equipment, tools, parts, or supplies	58
F183 Remove or replace minor plug-in or screw-in electronic components	58
F171 Fabricate or repair equipment cables	58
F179 Remove fixed communications equipment	55
K393 Troubleshoot or repair AFSATCOM modems	55
E163 Review preventive maintenance schedules	55
E165 Update maintenance data collection (MDC) data using CAMS	53
K369 Operationally check RF controls	53
F188 Troubleshoot cable assemblies	53
K377 Remove or replace central processing units (CPUs)	47
E161 Retrieve CAMS listings or reports	47
K365 Operationally check message processor controls	47
C120 Inventory classified materials	47
C111 Destroy classified materials	47
K370 Operationally check status display units (SDUs)	45
K357 Operationally check command post synchronizers	45

TABLE A9
ENGINEERING AND INSTALLATION JOB
(STG131)

TASKS	PERCENT MEMBERS PERFORMING (N=118)
O646 Form and fan equipment cables	92
O647 Install fixed communications equipment	92
F174 Install equipment grounds	87
F172 Install cable assemblies or internal wiring	86
O652 Install or remove electrical conduits	86
O649 Install or remove cable ladders	86
O642 Assemble and install cable troughs	81
O643 Assemble and install interconnects	78
F171 Fabricate or repair equipment cables	77
F173 Install cross-connections	72
F175 Operationally check test equipment	68
P680 Fire weapons for qualification	67
F179 Remove fixed communications equipment	66
O651 Install or remove distribution frames and associated wiring	65
P677 Don or doff chemical warfare personal protective clothing	62
D140 Inventory equipment, tools, parts, or supplies	57
O660 Perform post-installation operational tests	54
F188 Troubleshoot cable assemblies	50
O667 Prepare site for equipment installation	50
O662 Perform project or scheme reviews	48
F187 Solder or desolder connectors or hardwire circuits	47
B99 Maintain training records or files	47
O655 Install or remove power distribution systems	44
D135 Evaluate serviceability of equipment, tools, parts, or supplies	44
O648 Install or remove antenna systems	43
B0084 Conduct OJT	41
O654 Install or remove master station grounds	40
A72 Supervise military personnel	39
D148 Store equipment, tools, parts, or supplies	38
O663 Prepare job completion documentation	37
A59 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	36
O661 Perform pre-implementation surveys	36

TABLE A10

INSTRUCTOR JOB
(STG276)

TASKS	PERCENT MEMBERS PERFORMING (N=19)
B95 Evaluate progress of trainees	95
B83 Conduct formal course classroom training	89
B86 Counsel trainees on training progress	89
B100 Personalize lesson plans	84
B82 Complete student entry or withdrawal forms	84
B90 Develop training materials or aids	79
B105 Write test questions	79
B91 Develop training programs, plans, or procedures	74
B88 Develop formal course curricula, plans of instructions (POIs), or specialty training standards (STSS)	68
B98 Inspect training materials or aids for operation or suitability	68
B99 Maintain training records or files	68
B89 Develop performance tests	68
A12 Counsel subordinates concerning personal matters	68
B79 Administer or score tests	63
B93 Evaluate effectiveness of training programs, plans, or procedures	63
A45 Evaluate personnel for compliance with performance standards	58
D140 Inventory equipment, tools, parts, or supplies	58
E149 Access core automated maintenance system (CAMS) menus and data screens	58
A24 Direct training functions	53
B85 Conduct training conferences, briefings, or workshops	53
B103 Procure training aids, space, or equipment	53
A72 Supervise military personnel	47
B96 Evaluate training methods or techniques of instructors	47
N605 Configure patch panels	47
N604 Configure multiplexers	47
N603 Configure modems	47
D136 Identify and report equipment or supply problems	47
N602 Configure down-converters or up-converters	47
B92 Establish or maintain study reference files	42